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ABSTRACT

This final report describes activities and achievements of a two-year qualitative study to determine factors that contribute to successful campus implementation of student outcomes assessment by evaluating 15 student outcomes assessment pilot projects in the California State University system. Data sources included the evaluation reports from each of the pilot projects, interim and final project reports, interviews with project directors, and some site visits. Factors most commonly associated with successful implementation of assessment included: measurement adequacy, faculty involvement, administrative support, and expertise of the project director. Following the executive summary, individual sections of the report present a project overview and describe the project's characteristics, results, evaluation, and plans for continuation and dissemination. The bulk of the report consists of five appendices, including a list of the project's reviewers, newsletter reports of the project, a research report titled "Evaluation of Student Outcomes Assessment Pilot Projects in the California State University" (by Matt L. Riggs and Joanna S. Worthley), and the agenda of a 1991 assessment seminar. (DB)

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ED 416 745

A. Cover Sheet

EVALUATING STUDENT OUTCOMES ASSESSMENT IN THE CALIFORNIA STATE UNIVERSITY

Grantee Organization: The California State University Foundation
Office of the Chancellor
400 Golden Shore, Suite 122
Long Beach, CA 90802-4275

Grant Number: P116B91479-90

Project Dates: Starting Date: September 1, 1989
Ending Date: March 31, 1992
Number of Months: 31

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FIPSE Program Officer: Sherrin Marshall

Grant Award:

Year 1	$63,265
Year 2	$56,785
Total	$120,050

IHE 0300 800

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Evaluating Student Outcomes Assessment
in the California State University

Contents of Final Report

B. Summaries

Brief Project Description

The CSU Institute for Teaching and Learning conducted a two-year study to determine factors that contribute to successful campus implementation of student outcomes assessment, through an evaluation of fifteen student outcomes assessment pilot projects in the California State University system. A preliminary outline of the study was sent to 25 national and state assessment leaders for comments, and a national steering committee consisting of experts in the field was formed to guide the project. A faculty research team at CSU San Bernardino conducted the study, which found a number of variables common to successful outcomes assessment projects on different campuses and in different disciplines. Factors most commonly associated with successful implementation of assessment included measurement adequacy, faculty involvement, administrative support, and expertise of the project director. The results of the study were widely disseminated through presentations at a statewide faculty seminar and several national conferences as well as publication of two newsletters, a booklet, a monograph, and a video tape.

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Project Reports and Products:

"Assessment in the CSU." Special inserts in the *CSU Institute for Teaching and Learning Newsletter*, Winter 1990 and Spring 1991.

"Evaluation of Student Outcomes Assessment Pilot Projects in the California State University." FIPSE project report by Matt L. Riggs and Joanna S. Worthley, Department of Psychology, California State University, San Bernardino, 1992, 56 pages.

Student Outcomes Assessment. Sixth booklet in the "Academic Challenges" series, in press at the California State University Office of the Chancellor, 1993, approximately 25 pages.

Student Outcomes Assessment: What Makes It Work? -- Assessment Practices and Experiences in the California State University. Monograph published by the California State University, Institute for Teaching and Learning, 1992, 84 pages.

Student Outcomes Assessment: What Makes It Work? Videotape produced by the California State University, Institute for Teaching and Learning, 1992, 16 minutes.

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Evaluating Student Outcomes Assessment in the California State University

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Executive Summary

There have been many studies on state policy regarding student outcomes assessment, but few have examined the conditions for successful implementation of outcomes assessment at the campus level. From 1986 to 1989, the California State University system invested more than a half million dollars in campus pilot projects to demonstrate how student outcomes of various kinds can be used to assess the effectiveness of general education or baccalaureate degree programs. In 1989, the Fund for the Improvement of Postsecondary Education provided a grant to the CSU Institute for Teaching and Learning to conduct a comprehensive evaluation of the fifteen campus pilot projects, to determine factors that contributed to successful campus implementation of outcomes assessment, and to disseminate the results nationally.

In selecting the questions to be addressed in the evaluation study, the Institute for Teaching and Learning consulted with assessment experts in twenty-five other states and national organizations. A national steering committee was appointed to guide the study design, interpretation of findings, and dissemination plan. The study was conducted by a team of faculty researchers at CSU San Bernardino. Overall project direction and coordination of dissemination activities was handled by the Institute for Teaching and Learning in the CSU Office of the Chancellor.

The evaluation study was a qualitative examination of variables associated with successful implementation of student outcomes assessment on the pilot project campuses. The research team looked at environmental factors (such as faculty

involvement, project director's expertise, administrative support, campus policies) as well as methodological factors (such as specificity of project goals, adequacy of measures used, cost effectiveness); and assessed these factors in relation to both direct and indirect project outcomes. Data sources included the evaluation reports from each of the pilot projects, interim and final project reports, interviews with project directors, and, in some cases, site visits.

The study identified four major factors associated with successful implementation of assessment programs: (1) adequacy of assessment measures-including multicultural efficacy; (2) existence of administrative support; (3) level of faculty participation by all members responsible for implementation of any aspects of assessment programs; and (4) assessment project director's training/experience in assessment procedures. Relationships of numerous other variables to successful implementation of assessment were analyzed and reported.

Results of the study were disseminated and discussed throughout the California State University and the nation by way of:

- Two special inserts on "Assessment in the CSU" sent to more than 20,000 faculty members in the California State University with the *ITL Newsletter.*
- A statewide one-day seminar, "Toward a New Paradigm: Assessment in Multicultural California," held in conjunction with the sixth AAHE Conference on Assessment in Higher Education, attended by nearly 100 campus representatives.
- Presentations made by the research team at national conferences of the American Association for Higher Education, the Society for College and University Planning, and the American Educational Research Association.
- National distribution of a monograph (1,000 copies) and companion videotape entitled *Student Outcomes Assessment: What Makes It Work?*
- Publication of the study as the sixth booklet in CSU's "Academic Challenges" series, a series which reports on the evaluated results of academic pilot projects at CSU campuses.

Difficulties encountered during the project included coordination of meeting schedules for the national advisory committee, identification of a pool of prospective researchers to conduct the study (only one research team responded to our RFA), and production timeline delays in the preparation of the various materials for publication.

Among the most useful outcomes of the project were:

- Reconfirmed the importance of faculty involvement, administrative support, measurement quality, and faculty development in the assessment process.
- Contributed to the knowledge base on "assessment of assessment."
- Continued improvement in CSU's relationship with the Western Association of Schools and Colleges and with California policy makers as they became more aware of CSU's commitment to examining outcomes.

- Better dissemination of the campuses' experience than would have been possible to achieve without the FIPSE grant, both because of FIPSE's cachet, which helped attract attention to the study, and because of the resources that the project made available.
- Expanded and developed the network of people sharing expertise in student outcomes assessment, both within California and nationally.

C. Body of Report

Project Overview

- A two-year study was funded by FIPSE to determine factors that contributed to successful implementation of 15 campus pilot projects on student outcomes assessment in the California State University. A $63,265 grant was awarded for the first year starting September 1, 1989. A continuation proposal for the second year of the project was submitted to FIPSE in May 1990 and a $91,814 (including carry-over funds from year 1) grant was awarded. A request for a no cost time extension for the project was submitted to the program officer and was approved to extend the project period until March 31, 1992.

- National and state leaders in student outcomes assessment were contacted before the study started for comments on study design and major focus (see Appendix A for the list of the people contacted). A group of experts in the field of assessment formed the project's national steering committee (see Appendix B). Guidelines and advice provided by these scholars and administrators were instrumental in each major phase of the project: from the design of the study, to the interpretation of the findings, and the strategy for national dissemination.

- A faculty research team at CSU San Bernardino was identified through an RFP process to conduct the evaluation study.

- Two issues of "Assessment in the CSU" newsletter inserts were published and disseminated together with the Winter 1990 and Spring 1991 Institute for Teaching and Learning Newsletter to all 22,000 CSU faculty and interested parties in the nation (see Appendix C).

- The results of the evaluation study (contained in Appendix D) were widely disseminated through various mechanisms, including presentations at one CSU systemwide seminar (see Appendices E and F for the seminar agenda and evaluation report) and five national meetings, publication of one monograph (Appendix G), one videotape (Appendix H), and one booklet (in press). Dissemination of the project results will continue by conducting more presentations and discussions on assessment issues, connecting with state and national organizations to promote assessment practices and applications, publishing one more book, and selling the above mentioned project products through the CSU Academic Publications Program.

Purpose

- The study was to evaluate 15 student outcomes assessment pilot projects in the California State University system to identify factors that contribute to the success of the projects and can be generalized across institutions and disciplinary areas. It was believed that the experiences learned from these projects are of great value in implementation and decision-making practices of assessment programs at higher education institutions. The results of this study were to be disseminated throughout the nation by various dissemination mechanisms.

- Problems encountered during the project period included: (1) difficulty in convening the nationwide steering committee for meetings; (2) low response by CSU faculty researchers to the request for applications to conduct the study; (3) the increase of the faculty research team's work load on their campus due to budget reduction which in turn resulted in the delay of delivering products and in fewer dissemination activities carried out by the team; and (4) production timeline delays in the development of dissemination materials.

Background and Origins

- In response to the call for educational accountability and the national movement in student learning outcomes assessment, the California State University launched a series of systemwide activities beginning in 1986 to support educational reform through assessment.

- In the absence of state mandated assessment, the CSU system developed in 1988 a systemwide policy framework on outcomes assessment after two years of study and discussion by the chancellor-appointed systemwide advisory committee on student outcomes assessment.

- Two systemwide assessment conferences were held in 1986 and 1988, respectively. The first conference convened CSU faculty, administrators, California state higher education officers, and national leaders in assessment to discuss various issues in assessment and how to implement assessment programs on campuses. The purposes of the second conference was to share campus experiences in assessment from their investigation and experimentation, and to discover the possibility of formulating systemwide policy recommendations. Open discussions in these two conferences were useful in enabling the advisory committee on student outcomes assessment to identify overall guiding principles and recommendations.

- Since 1986, the California State University has supported 15 campus pilot projects to implement student outcomes assessment programs through the Chancellor's Academic Program Improvement Campus Grants Program. More

than a half million dollars were invested by the CSU in these pilot projects, which developed and field-tested a variety of assessment measures/instruments, including portfolios, interviews, senior/capstone projects, surveys, and examinations. The level of application ranged from individual course to department and the entire campus.

Project Description

- The evaluation study was designed and shaped by the comments from experts and leaders in the field across the nation. A preliminary outline for the study was sent to 25 national and state leaders in learning outcomes assessment for comments. Nearly half of them responded and their comments were considered in shaping the central research focuses and methods of the study.

- A group of experts in the field of assessment formed the project's national steering committee. Three steering committee meetings were held: (1) in January 1990 to establish guidelines for conducting the evaluation study; (2) in November 1991 in conjunction with the pilot project directors' meeting convened by the research team to hear the research team report the preliminary findings of the survey of pilot project directors, as well as to discuss the plan for the project second year and guidelines for the CSU faculty seminar on assessment; (3) in May 1991 to discuss the preliminary findings of the study and aspects related to the June CSU assessment seminar and other dissemination activities.

- The search for faculty investigators to conduct the study was handled through issuing a request for applications (RFA) to all 20 CSU campuses. The response to this RFA by CSU faculty was low with several possible reasons, e.g., inadequate funding for the task; ineligibility to apply by former CSU assessment project grantees; insufficient distribution of the RFA on campuses; lack of faculty interest due to non-traditional area of research. A faculty research team at CSU San Bernardino, however, was identified and recommended by the steering committee to conduct the study.

- The study was difficult to design because the pilot projects under investigation varied widely in their research questions, methodological approach, data generated, overall project environment, and level of sophistication. The study as designed was qualitative rather than quantitative.

- The results of the study showed that four major factors affect the success of implementing assessment programs: (1) adequacy of assessment measures developed/adopted; (2) existence of administrative support; (3) level of faculty participation by all members responsible for implementation of any aspects of assessment programs; and (4) project director's training and experience in assessment procedures. The relationships of numerous variables to successful implementation of assessment were analyzed and reported.

- Two issues of "Assessment in the CSU" newsletter insert were published: (1) in the fall of 1990 which contained the plan for the FIPSE-sponsored study along with highlights of campus assessment activities; (2) in the spring of 1991 which contained preliminary findings of the study and the announcement of the CSU assessment seminar in June. Both issues were distributed to all 22,000 full time and part time faculty and academic administrators in the CSU system and to approximately 2,000 other higher education institutions and organizations nationwide.

- Dissemination of the study results and other information on assessment began early in the project and still continues. The activities included: (1) presentation of the evaluation results by the research team and presentations of numerous CSU campus pilot programs by project directors at a CSU systemwide assessment seminar, in conjunction with the American Association for Higher Education (AAHE) national assessment forum, which brought about 100 CSU faculty and participants from other higher learning institutions; (2) presentations of several CSU panels at various national meetings, including the 1991 AAHE assessment forum, the 1991 the Society for College and University Planning (SCUP) conference, and the 1992 American Educational Research Association (AERA) meeting; (3) discussions of the CSU-FIPSE project occurred at the 1991 Assessment Institute and at the 1992 AAHE assessment forum; (4) publication in June 1992 and continuous dissemination of a monograph on student outcomes assessment which contains chapters on the evaluation results, campus case studies, and the development of CSU assessment policy; (5) a companion videotape production which contains interviews with assessment researchers and practitioners discussing strategies for implementing assessment programs; (6) a booklet on student outcomes assessment which summarizes the 15 CSU assessment pilot projects and the results of the FIPSE evaluation study to be published and disseminated in spring 1993 under the CSU Academic Program Improvement "Academic Challenges" Series.

Project Results

What Faculty Learned from the Project

- Faculty who were involved in the study or participated in the dissemination activities learned the following elements: (1) important factors that affect the success of implementing assessment programs on campus; (2) national perspectives on student outcomes assessment; (3) CSU experiences, practices, and policy in outcomes assessment; and (4) the continuous momentum of integrating assessment into teaching practice and using assessment results for educational improvement, including discussions of accreditation guidelines related to assessment.

Evaluation of the Project

- The project was monitored closely by the project director to assure the timelines and deadlines associated with the study and dissemination activities were met. Revisions of the timelines have been made along the way to accommodate fluctuations.

- Estimated 200 faculty and administrators across the nation were directly involved in research or dissemination activities associated with this project. Another 500 received the project results and products through the mail. All 22,000 CSU faculty and academic administrators received two issues of the newsletter "Assessment in the CSU."

- The study results have been widely disseminated throughout the nation, including presentations at the CSU systemwide seminar and national meetings. The participants at the CSU assessment seminar evaluated the meeting positively and pointed out that the most valuable aspect of the seminar was the opportunity to meet colleagues and exchange experiences. The study has thus far received very good recognition and visibility.

Plans for Continuation and Dissemination

- The two major end products of this study, a monograph on assessment practices and experiences in the CSU and a videotape featuring interviews with assessment researchers and practitioners on the topics of effective implementation strategies, will continue to be made available nationally through CSU's Academic Publications Program.

- A booklet containing summaries of the campus pilot projects and results of this evaluation study will be published by the CSU in 1993. This booklet will be included in the CSU Academic Program Improvement "Academic Challenges" series and disseminated through the CSU Academic Publications Program to interested parties in the state and nation.

- Further dissemination of the study results and other CSU assessment activities will continue through programs administered by the Institute for Teaching and Learning, such as ITL's annual national conference, *The Teaching and Learning Exchange*.

- The Institute for Teaching and Learning will continue to work closely with other higher education constituencies, such as the National Center for Teaching, Learning, and Assessment and the Western Association of Schools and Colleges (WASC), to make assessment an integral part of regular instructional practices and to improve education by using assessment results.

Summary and Conclusions

- Convening a national steering committee to guide the development of the project caused scheduling problems and some project delays, but the improved project design and products that resulted from the committee's national perspectives made this aspect of project management worth the trouble.

- Faculty and administrators interested in assessment need and appreciate opportunities to meet colleagues to keep the assessment dialogue open, to exchange their experiences, and to make the assessment momentum continue in higher education. This is especially important during times of budget cutbacks.

- Our experience with this project confirms that, outside of a few selected disciplines, faculty often lack interest in conducting research in student outcomes assessment. To begin to turn this around, appropriate rewards must be provided for faculty who engage in such research.

- Faculty who participated in this project indicated a desire for more step-by-step instructions on implementing assessment in their classrooms and departments. In planning for future dissemination or technical assistance activities, we will include: (1) presentations by experienced faculty who have actually implemented assessment programs; (2) more training on the development and use of assessment instruments; (3) small group working sessions on specific problems; and (4) more examples of successful assessment in subject matter areas.

D. Appendices

A. List of CSU-FIPSE Project National Reviewers

B. CSU-FIPSE Project Steering Committee

C. "Assessment in the CSU" Newsletter Inserts

D. "Evaluation of Student Outcomes Assessment Pilot Projects in the California State University" Research Report

E. Agenda for the 1991 CSU Systemwide Assessment Seminar

F. Evaluation Report of the 1991 CSU Systemwide Assessment Seminar
[Not included in this copy.]

G. *Student Outcomes Assessment: What Makes It Work?* – Monograph
[Not included in this copy. See ED 363 227.]

H. *Student Outcomes Assessment: What Makes It Work* – Videotape
[Non-print component. Not included with ERIC copy.]

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INSTITUTE FOR TEACHING AND LEARNING

Assessment in the CSU

Number 1 Winter 1990

THE ■ CALIFORNIA ■ STATE ■ UNIVERSITY

CSU Receives FIPSE Grant

■ ■ ■ The CSU has been awarded a grant from the United States Department of Education Fund for the Improvement of Postsecondary Education to conduct an evaluation study to determine those factors contributing to the relative success of the 15 CSU student outcomes assessment pilot projects funded by the Academic Program Improvement Campus Grants Program. According to Dean Helen Roberts, "Results of this study are of potential national importance in understanding how to implement student outcomes assessment at large public universities. We want to share our findings and disseminate validated assessment practices to other faculties and institutions."

A blue ribbon steering committee was appointed by Lee Kerschner, vice chancellor for academic affairs, to guide the project. At the committee's initial meeting held in January, a number of recommendations regarding project design and implementation were proposed and issues regarding the dissemination of findings were discussed. Members of the steering committee include: Bernard Goldstein, professor of biology and director of research and professional development, San Francisco State University; Becky Loewy, professor of psychology and vice chair of the statewide Academic Senate, San Francisco State University; Priscilla Chaffe-Stengel, professor of information systems and decision sciences, CSU Fresno; Olita Harris, professor of social work, San Diego State University; John Toffel, director, Program Excellence Initiatives, Ohio Board of Regents; Peter Ewell, senior associate, National Center for Higher Educational Management Systems; Daniel Stufflebeam, director, Evaluation Center, Western Michigan University; Frank Young, associate dean of academic affairs for plans, Office of the Chancellor; and Angel Sanchez, associate director of analytic studies, Office of the Chancellor.

During the second year of the grant, findings of the study will be published by the CSU Institute for Teaching and Learning and disseminated broadly within California and nationally. By the fall of 1990, the CSU will have in place a systemwide policy statement on student outcomes assessment. The results of this study are of critical importance to CSU campuses as they move to implement the new policy and to comply with new guidelines of the Western Association of Schools and Colleges. Additional dissemination activities will include issuing a series of newsletters to CSU faculty, and a summer workshop for faculty who are planning to implement assessment programs in their departments or campuswide.

Commentary

■ ■ ■ The Institute for Teaching and Learning invites all CSU faculty, administrators and professional staff to submit commentary on assessment issues and practices for publication in this column. Topics may range from the theoretical and philosophical to the more pragmatic experiences associated with implementation campus and department levels. This is an opportunity to share with your colleagues information on what has been happening at your campus and what insights you've gleaned. Send copy to Pamela Krochalk, Assistant Dean, Institute for Teaching and Learning, 400 Golden Shore, Long Beach, CA 90802-4275; FAX (213) 590-5749.

Hayward Faculty to Study Writing Assessment

■ ■ ■ The Academic Program Improvement Campus Grants Program funded three projects related to student outcomes assessment during the 1989-90 grant cycle. Mary Cullinan, English Department, CSU Hayward, was one such recipient for her proposal entitled "Assessment of Student Outcomes: A Basic Writer's Writing Program." Cullinan states, "Our goal for the 1990's is to insure that our basic writing program addresses the needs of all students who are at risk in the university community because of language impediments. This program assessment will help us to examine the factors that help students write well; it will also enable us to modify the program so it is more sensitive to the problems students experience as they face the pages of their writing assignments."

Assessment of student writing will focus on a holistic evaluation of student portfolios and essays. Other evaluative procedures will include perceived writing improvement, identification of activities that increase effective writing, comparison of remedial level to progress, and follow-up of freshman composition experience.

Mary Cullinan

Cullinan goes on to say that the wide variety of data acquired will contribute to the growing fund of information about the teaching of writing to native and non-native basic writers. "Our findings should be extremely useful to administrators and faculty on other campuses where basic writing classes are becoming an increasingly important part of the curriculum."

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Marylu Mattson Heads Liberal Studies Assessment Project at Sonoma

■ ■ ■ Professor Marylu Mattson, Hutchins School of Liberal Studies, Sonoma State University, suggests that although faculty may believe that assessment of students' coursework provides some indication of program effectiveness, it is of little value to the individual student who is being assessed.

Through funding from the Academic Program Improvement Campus Grants Program, Mattson says she is attempting to overcome this shortcoming inherent in many "outcomes assessment" plans. Faculty in liberal studies at SSU will design a system wherein majors develop an individualized learning plan and a portfolio demonstrating progress towards the goals specified in the plan. A junior-level "gateway course" will, among other things, allow adequate time for one faculty member to evaluate the student's strengths and weaknesses in several areas, introduce the student to the portfolio process, and help the student establish a personal study plan for the major. Advising in subsequent semesters will use the developing portfolio as an ongoing means of helping student and advisor understand what progress is being made toward the goals established at the outset for the individual student. During a capstone course, an assessment will be made of the portfolio as well as the development of higher order skills.

The goal of the project is to integrate formative and summative assessment into the curriculum in a way that will aid the student's development as a self-motivated learner. During the first phase of the grant, five faculty task forces will examine various aspects of the curriculum and design a process for the inclusion of portfolios. During the second phase of the pilot project, portfolios will be incorporated in a course introductory to the major.

Nursing Ties Assessment to Job Competencies at Chico

■ ■ ■ Bessie Marquis, professor of nursing, CSU Chico, was funded through the Academic Program Improvement Campus Grants Program to conduct "Outcomes Assessment of Four Classes of Nursing Graduates." According to Marquis, the purpose of the study is to determine the extent to which four consecutive classes of graduated nursing students have achieved and continue to demonstrate on-the-job competencies delineated by the faculty as the end-of-program objectives. Based on a 1982 study, the current project is expanded to include further analysis of existing data, extent to which graduates meet the nursing practice competencies specified in the curriculum, relationships between existing measures of student competence and subsequent success in the workplace, and comparisons of alumni assessments over time. The results of the study will be used to make appropriate changes in curriculum design and implementation.

Bessie Marquis

CSU Report on Student Outcomes Assessment Ready for Approval

■ ■ ■ The draft report of the CSU Advisory Committee on Student Outcomes Assessment has been completed and will be taken before the statewide Academic Senate for action in March and the Board of Trustees for final approval in May.

The committee was established in November 1987 by Chancellor Reynolds who charged its members with studying student outcomes assessment and advising the Chancellor on related policies; coordinating responses to the California Postsecondary Education Commission in connection with its study of outcomes assessment; and submitting a report and recommendations for directions the CSU should take with regard to outcomes assessment.

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San Diego Sponsors Conference on Student Outcomes Assessment

■ ■ ■ San Diego State University plans a campuswide conference on student outcomes assessment entitled "Assessment of Learning: Who, What, When, Why & How." According to Olita Harris, chair of the University Assessment Committee, which sponsors the conference, "The purposes of the conference are to bring together faculty, administrators, and students to share information about assessment activities undertaken by the various departments and to create a widening base for assessment activities, expertise, and enthusiasm on this campus." Scheduled for February 23, the conference is designed to offer participants the opportunity to voice their apprehensions, frustrations, successes and ideas in a collegial atmosphere. Topics to be discussed include statewide initiatives, policy environment for assessment of learning, assessment of learning in the disciplines, assessment models, standardized instruments, and instrument development and use.

■ Meetings and Events ■

March 26-27: The 1990 ACT National Assessment Conference, "Accreditation and Accountability - Challenges for Assessment," Kansas City, MO. Contact: Donna Appleglise, ACT Educational Services Division, P.O. Box 168, Iowa City, IA 52243. Tel.: (319) 337-1032.

June 27-30: Fifth National Conference on Assessment, The Washington Hilton in Washington, D.C. Last call for papers - due immediately. Contact: Barbara D. Wright, Assessment Forum, American Association of Higher Education, One DuPont Circle, Suite 600, Washington, D.C. 20036. Tel.: (202) 293-6440, FAX: (202) 293-0073.

October 19-21: Annual Meeting of the American Evaluation Association, San Francisco. Technical Interest Group on Assessment in Higher Education has scheduled five sessions. Contact: Mary Anne Bunda, Director, Office of University Assessment, Western Michigan University, Kalamazoo, MI 49008-5130. Tel.: (616) 387-3031.

October 19-21: Third Colloquium on Writing Assessment, Missouri Western State College. Contact: Renee Betz, Central Missouri State University, Warrensburg, MO 64093. Tel.: (816) 429-4780.

INSTITUTE FOR TEACHING AND LEARNING

Assessment in the CSU

Number 2 Spring 1991

THE ■ CALIFORNIA ■ STATE ■ UNIVERSITY

FIPSE-Funded Assessment Study Nears Completion

■ ■ ■ A California State University study sponsored by the Fund for the Improvement of Postsecondary Education (FIPSE) is identifying factors which contribute to effective assessment programs. The study, conducted by psychologists Matt Riggs and Joanna Worthley of CSU San Bernardino, is designed to evaluate the effectiveness of 15 CSU student outcomes assessment pilot projects funded in 1986-90 by the Academic Program Improvement (API) Grants Program. Findings of the study are due to be released at a statewide conference on June 8, 1991.

Data collection for the evaluation began in fall 1990, with an extensive survey mailed to pilot project directors. Discussion of assessment activities and project outcomes continued at a meeting of API project directors with the evaluation team in November at San Francisco State University. "The San Francisco meeting allowed a productive exchange among faculty whose experience with the pilot assessment initiatives is expected to provide direction for continuing assessment in the CSU," according to Dr. Riggs. Data were also collected from several other sources, including: 1) a follow-up survey focused on multicultural dimensions of the pilot projects; 2) API project directors' final reports; and 3) external evaluation reports of the API projects.

"Evaluation of the relative effectiveness of the pilot projects involves a careful description of the relationship of assessment environment and methods to assessment outcomes," said Dr. Worthley. To demonstrate the relationships among these factors for each project, the researchers developed a "site-ordered predictor-outcome matrix." The matrix displays a project's standing on both environmental variables (such as faculty ownership, administrative support, and campus attitudes toward assessment activities) and methodological variables (such as definition of project goals, attention to measurement properties of proposed instruments, and multi-measurement approaches to assessment). This matrix, together with a large database of qualitative information on the projects, is expected to yield two important indices of effectiveness: 1) a "checklist" of environmental and methodological factors, in order of their importance, which contribute to effective assessment; and 2) an estimate of the replicability of the various measurement strategies used in the pilot projects, based on the availability of critical factors in a proposed assessment setting. Data analysis will be focused on describing the "goodness of fit" between project characteristics and an extensive list of predictor variables.

Members of the steering committee for the study are:

Priscilla Chaffe-Stengel, Professor of Information Systems and Decision Sciences, CSU Fresno;
Peter Ewell, Senior Associate, National Center for Higher Education Management Systems;
Bernard Goldstein, Acting Director, Research and Professional Development, San Francisco State University;
Olita Harris, Professor of Social Work, San Diego State University;
Becky Loewy, Professor of Psychology, San Francisco State University;
Angel Sanchez, Associate Director, Analytic Studies, CSU Office of the Chancellor;
Daniel Stufflebeam, Director, Evaluation Center, Western Michigan University;
John Tafel, Director of Authorization and Director of Program Excellence Initiatives, Ohio Board of Regents;
Frank Young, Director, California Academic Partnership Program, CSU Office of the Chancellor; and
Helen Roberts, State University Dean, Institute for Teaching and Learning, CSU Office of the Chancellor.

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Systemwide Assessment Seminar Scheduled in June 1991

■ ■ ■ The CSU Institute for Teaching and Learning is sponsoring a systemwide faculty seminar on student outcomes assessment, scheduled for Saturday, June 8, 1991, from 10:00 am - 6:00 pm. The CSU seminar, entitled "Toward a New Paradigm: Assessment in Multicultural California," will be held in conjunction with the American Association for Higher Education Conference on Assessment in Higher Education, both at the San Francisco Hilton Hotel.

Results of a statewide evaluation of fifteen CSU assessment pilot projects will be released at the seminar. Discussions of these results and other assessment issues related to program and institutional effectiveness in our multicultural university will be on the agenda. The seminar will also feature presentations by the project directors of several successful CSU assessment projects funded by Academic Program Improvement (API) grants, along with comments by the following distinguished speakers:

- *Peter Ewell*, Senior Associate, National Center for Higher Education Management Systems;
- *Sherrin Marshall*, Program Officer, Fund for the Improvement of Postsecondary Education;
- *Ralph Wolfe*, Associate Director, Western Association of Schools and Colleges.

Each CSU campus has been invited to select a team of people to attend. For more information, contact Dr. Olita Harris, Seminar Chair and Coordinator, School of Social Work, San Diego State University, (619) 594-6860.

This seminar is being made possible through a grant from the Fund for the Improvement of Postsecondary Education (FIPSE).

Resource Guides Developed for Teacher Assessment

■ ■ ■ The CSU Board of Trustees adopted a policy in September 1985 calling for faculty in the academic disciplines to assess and certify the subject matter competence of prospective teachers. Systemwide workgroups have been formed to develop resource guides for assessment in various disciplines. Faculty participating in CSU subject matter assessment development are also contributing to state and national development of improved teacher assessment processes. Resource guides have now been completed in eight disciplines by each coordinating campus: art (Los Angeles), English (systemwide), foreign language (San Diego), liberal studies (systemwide), life science (Sacramento), music (San Francisco), physical education (Fresno), and social science (San Diego).

CSU Faculty Present Assessment Outcomes at National Meetings

■ ■ ■ Several groups of CSU faculty and administrators are presenting CSU experiences and research findings in student outcomes assessment at national professional meetings during 1991.

Meeting	Panel	Topic
American Association for Higher Education Annual Meeting March 1991 Washington, D.C.	M. Riggs & J. Worthley, CSU San Bernardino; O. Harris, San Diego State; H. Roberts, Chancellor's Office	Equity in Assessment
American Association for Higher Education Conference on Assessment in Higher Education June 1991 San Francisco, CA	P. Chaffe-Stengel, CSU Fresno; B. Goldstein, San Francisco State; L. Mattson, CSU Sonoma; M. Riggs, CSU San Bernardino	Assessment in a Time of Budgetary Cutbacks
	E. Barkan & J. Worthley, CSU San Bernardino; O. Harris, San Diego State; M. Lee, Chancellor's Office	Equity in Assessment
	B. Goldstein, San Francisco State; F. Young, Chancellor's Office	CSU Assessment Policy
	R. Ching & C. Moore, CSU Sacramento	ESL Assessment in CA
	J. Carter-Wells, CSU Fullerton; D. Halpern, CSU San Bernardino; G. Marsh, CSU Dominguez Hills; S. Nummedal, CSU Long Beach	Assessment of Critical Thinking
	D. Cohen, CSU Bakersfield; C. Lindeman, San Francisco State; J. Mendelsohn, Chancellor's Office	Assessing Future Teachers
Society for College and University Planning Annual Meeting July 1991 Seattle, WA	M. Riggs & J. Worthley, CSU San Bernardino; O. Harris, San Diego State; H. Roberts, Chancellor's Office	Equity in Assessment

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EVALUATION OF STUDENT OUTCOMES ASSESSMENT PILOT PROJECTS IN THE CALIFORNIA STATE UNIVERSITY

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Assistant Professor

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EVALUATION OF STUDENT OUTCOMES ASSESSMENT PILOT PROJECTS IN THE CALIFORNIA STATE UNIVERSITY

EXECUTIVE SUMMARY

Beginning in 1986, Academic Program Improvement grant funds have supported a series of student outcomes assessment projects initiated by faculty in a variety of disciplines on 15 campuses of the CSU. These pilot projects were aimed at demonstrating how student outcomes of various kinds can be used to assess the effectiveness of General Education and baccalaureate degree programs.

The present study, sponsored by the Fund for the Improvement of Postsecondary Education (FIPSE) provides a "meta-assessment" of the 15 pilot projects. The purpose was to define features which were consistently associated with project effectiveness.

METHOD

A three-part framework was used to specify variables and to organize the data. Relevant variables were conceptualized within the categories of environmental factors, methodological factors, and assessment project outcomes (see Figure 1). Data were obtained from project final reports, directly from the project directors (via mail surveys, phone surveys, and personal contact), other reports or articles resulting from each assessment project, and the reports submitted by the projects' external evaluators.

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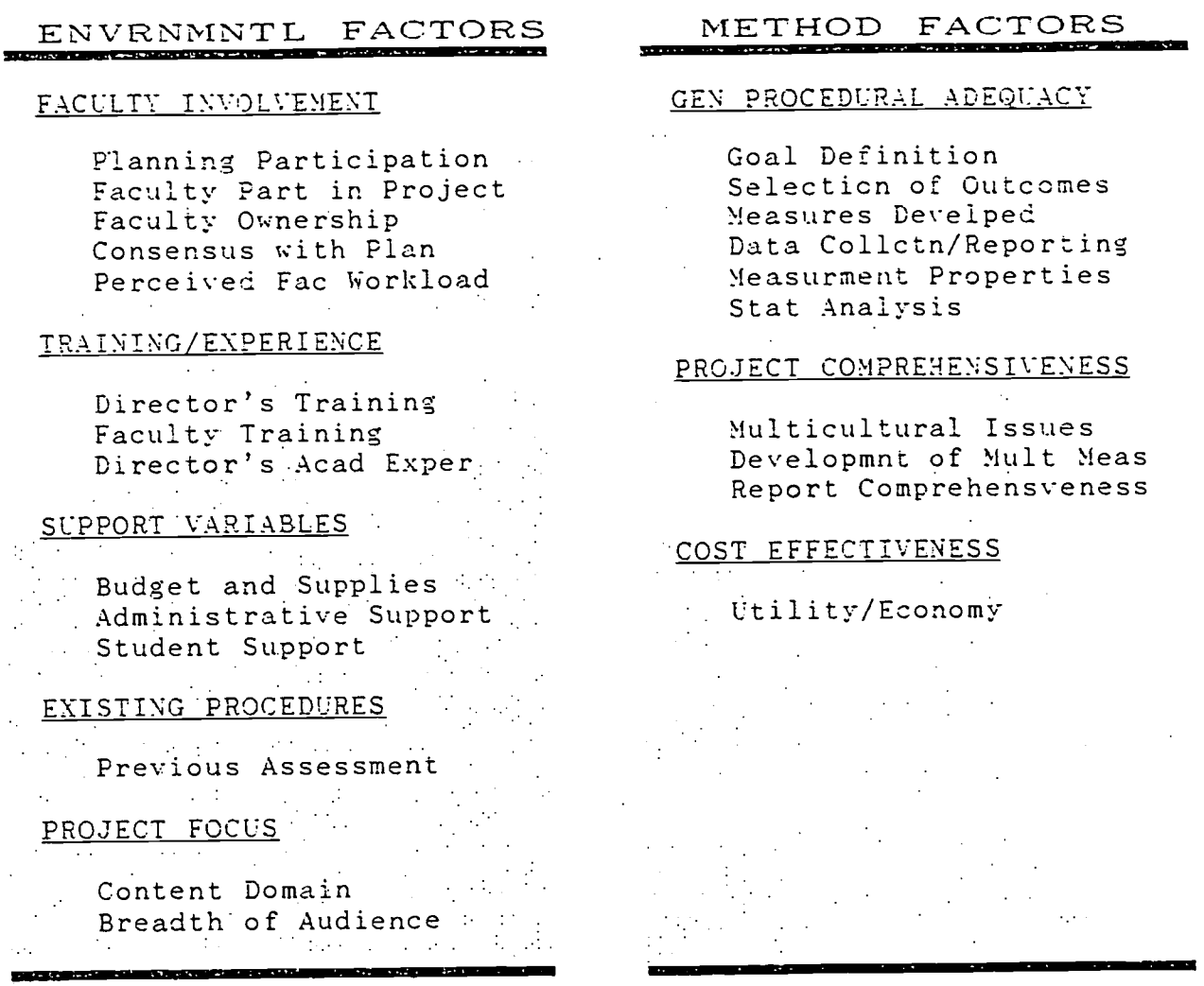
FIGURE 1: Conceptual Model



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ANALYSIS

All data were condensed and entered onto a "meta-matrix." This master chart contained information relevant to all thirty-seven variables for all projects included in the final assessment. On the basis of information represented in this matrix, a qualitative categorization of all projects on all variables was completed. For each project, all variables were classified as:

4 - strongly present/achieved,

3 - partly present/achieved,

2 - weakly present/achieved,

1 - absent/not achieved.

Environmental and methodological factors served as predictor variables. Criterion scores were produced using: 1) the average of all outcomes, 2) the average of outcomes categorized as direct outcomes, and 3) the average of indirect outcomes. All scores were then standardized.

"Consistency" between predictors and outcomes was assessed by computing the squared deviations between each predictor and the average "outcome" (overall, direct, & indirect), summing these squared deviations across project sites, and dividing the resulting value by the number of projects. The resulting "variance with outcomes" across sites is smallest for those variables that were most consistently related to outcomes.

These results are summarized in Table 1. The rank orders enable comparison of the relative importance of predictors.

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Table 1: Predictor Variable Rank Orders

Predictor Variables	All Outcomes	Direct Outcomes	Indirect Outcomes
Faculty Involvement			
Faculty Partic. in Planning	24	24	22
Faculty Partic. in Project	4	1	10
Faculty Ownership of Project	14	8	16
Faculty Consensus with Plan	12	4	19
Perceived Faculty Workload	6	9	3
Training/Experience			
Director's Training in SOA	5	12	2
Faculty Training in SOA	17	16	18
Director's Academic Experience	23	23	23
Support Variables			
Adequate Budget/Supplies	19	20	17
Administrative Support	3	3	4
Student Support of Project	18	11	21
Existing Procedures			
Existence of Previous SOA	16	19	12
Project Focus			
Content Domain	20	18	20
Intended Breadth of Audience	2	5	1
General Procedural Adequacy			
Project Goal Definition	13	15	8
Selection of Outcomes	9	7	7
Adequacy of Measures Developed	1	2	5
Data Collection/Reporting	15	17	14
Measurement Properties Reported	10	13	11
Statistical Analysis	11	14	9
Project Comprehensiveness			
Sensitivity to Multicult. Issues	7	10	6
Development of Multiple Measures	8	6	13
Report Comprehensiveness	21	22	15
Cost Effectiveness			
Utility/Economy of Project	22	21	24

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RESULTS

ENVIRONMENTAL FACTORS

Faculty Involvement Variables

Two faculty variables were consistently toward the top of the respective rank orderings. "Faculty Participation" and "Perceived Faculty Workload" appear to be important indicators of assessment success.

"Faculty Ownership" and "Faculty Consensus with Plan" were also relatively good for direct outcomes. "Faculty Participation in Planning" appears to have little to do with project outcomes.

Training/Experience with Student Outcomes Assessment

Project outcomes were associated with the project director's efficacy in outcomes assessment. Faculty training and the project director's general academic background and experience were not as closely tied to project results.

Support Variables

Administrative support was closely tied to project outcomes, both direct and indirect. Neither adequacy of budget, supplies, and other institutional resources nor student support were closely associated with project outcomes.

Existing Student Outcomes Assessment Procedures

Prior experience with assessment did not seem to have a consistent positive or negative effect on outcomes.

Project Focus

The content area in which the project occurred had little to do with the relative success of the project. However, the

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intended breadth of the audience was very closely associated with outcomes. The "Breadth of Audience" construct was anchored at the low end by those projects reporting only to the funding institution and at the high end by projects disseminating their results nationally.

METHODOLOGICAL FACTORS

General Procedural Adequacy

The single most critical variable from this category was the development/adoption of good measures of student outcomes. Appropriate selection of outcomes to measure was moderately associated with project outcomes.

"Project Goal Definition," the adequacy of "Statistical Analyses" conducted, "Data Collection/Reporting," and the reporting of "Measurement Properties" did not appear to co-vary tightly with project results.

Project Comprehensiveness

The "Development of Multiple Measures" of student outcomes and "Sensitivity to Multicultural Issues" appeared moderately associated with project outcomes. The comprehensiveness of the reports made available were not closely related to project outcomes.

Cost Effectiveness of Project

The "Utility/Economy" of the projects' assessment procedures was near the bottom of the rank ordering. Apparently expensive projects in terms of dollars spent to students assessed were not always the richest in results.

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SUMMARY

Though qualitative analysis does not enable the same level of precision as might be obtained from more quantitative data, the observations and resulting classifications produced in this study were systematic, relatively objective, and almost always based on multiple sources. Additional testing and replications of this study's conclusions is suggested, and could occur within the CSU's continuing program to develop and monitor programs of student outcomes assessment.

The results of this analysis suggest that future initiatives be especially sensitive to four variables: 1) the adequacy of the measures developed/adopted, 2) the development of administrative support, 3) faculty participation by all members responsible for implementation of any aspect of the assessment project, and 4) the assessment project director's training/experience with student outcomes assessment procedures.

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INTRODUCTION

The current assessment movement in higher education is driven by the wary partnership of reform and accountability, a partnership yielding a complex and diverse collection of assessment activities in university settings (Ewell, 1991). Over the last several years, the California State University System has moved to construct an assessment agenda which responds to both reform and accountability in ways that will preserve the commitment of the CSU to intellectual and programmatic diversity. Beginning in 1986, Academic Program Improvement grant funds have supported a series of student outcomes assessment projects initiated by faculty in a variety of disciplines on 11 campuses of the CSU. These pilot projects, under the aegis of the CSU Institute for Teaching and Learning were aimed at demonstrating how student outcomes of various kinds can be used to assess the effectiveness of General Education and baccalaureate degree programs.

The present study, sponsored by the Fund for the Improvement of Postsecondary Education (FIPSE) provides a "meta-assessment" of the 15 pilot projects. These projects, briefly detailed in Table 1, have developed and field-tested a variety of assessment measures/instruments, including portfolios, interviews, senior/capstone projects, surveys, and examinations. (For a fuller description of projects with their data sources, see Appendix A).

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Table 1

CALIFORNIA STATE UNIVERSITY PILOT PROJECTS IN STUDENT OUTCOMES ASSESSMENT

Director & Campus	Project Title & Focus
Betty Blecha Leigh Mintz CSU Hayward with Newman Fisher Richard Giardina San Francisco S U with Leon Dorosz Howard Shellhammer San Jose S U	Assessment of Majors: A Three-Campus, Three-Discipline Model Focus: Development of comprehensive examinations for seniors in biology, economics, and mathematics
Priscilla Chaffe-Stengel CSU Fresno	Assessment of Undergraduate Reading Competence Focus: Assessment of student reading strategies and competence related to course assignments and library skills
Priscilla Chaffe-Stengel CSU Fresno	Assessment of Undergraduate Writing Competence Focus: Assessment of student performance on the Upper Division Writing Exam as a function of course exposure and language proficiency
S. Eugene Clark CSU Bakersfield	Knowledge and Attitudes in General Education: A CSU-Community College Joint Assessment Focus: Assessment of impact of GE course in Western Civilization on students' knowledge and values
P. Chris Cozby Jeffry Young CSU Fullerton	Student Outcomes Related to Curricular Variety in Gerontology Focus: Development of a model for cross-campus assessment of outcomes for interdisciplinary programs in gerontology in the CSU

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Director & Campus	Project Title & Focus
Mary Cullinan CSU Hayward	Assessment of Student Outcomes: A Basic Writer's Writing Program Focus: Development of a model for assessing outcomes in the Intensive Learning Experience (ILE) writing course sequence
Catharine Dezseran Peter Grego CSU Northridge	Student Outcomes Assessment in Academic Program Improvement in Theatre Focus: Development of a performance-based mastery test for summative and formative assessment of student achievement in theatre
Catharine Lucas San Francisco S U	Assessing Outcomes for English Teacher Candidates Focus: Development of an "assessment course" to evaluate the subject-matter competency of teacher credential candidates in English language arts
Bessie Marquis CSU Chico	Outcomes Assessment of Four Classes of Nursing Graduates Focus: Development of a multi-measure assessment of nursing program graduates to identify trends in program effectiveness from 1983 - present
Marylu Mattson Sonoma S U	Integrating Student Outcomes Assessment into the Curriculum Focus: Development of a portfolio system to assess formative and summative outcomes for students in an interdisciplinary liberal studies program
Andrew Moss C S P U, Pomona	Enhancing Quality by Assessment: A General Education Project Focus: Development of a comprehensive assessment program for an Interdisciplinary General Education Program

Director & Campus	Project Title & Focus
Kenneth L. Nyberg CSU Bakersfield	An Empirical Evaluation of Five Baccalaureate Social Science Programs Focus: Development of a model to conduct longitudinal assessments of student performance and perceptions of degree programs in anthropology, economics, political science, psychology, and sociology
Harry Polkinhorn San Diego S U	Student Outcomes Assessment: Liberal Studies Major Focus: Development of a multi-measure assessment program for student outcomes in liberal studies

This "meta-assessment" of the projects is designed to define features across the 15 projects which were consistently associated with effective assessment, and which might be expected to facilitate wider implementation of the assessment strategies field-tested experimentally. Moreover, because they represent a range of disciplinary perspectives, the pilot projects offer an opportunity to attempt a description of factors which predict assessment effectiveness across traditional boundaries. A summary of these features should contribute to the continued review of existing instructional approaches and administrative supports for the teaching/learning process in the CSU, as well as to the broader discussion of policy initiatives in assessment in other university contexts.

METHOD

The project used a multi-site method with a mix of

qualitative and quantitative methods to evaluate factors that may have determined the outcomes achieved in fifteen California State University pilot assessment projects. A three-part framework was used to specify variables and to organize the data. Relevant variables were conceptualized within the categories of assessment environment, assessment methods, and assessment outcomes.

Assessment Environment

The assessment environment was defined as the social and organizational setting in which each project occurred. Variables relevant to the determination of this construct included:

1) general faculty participation in the planning of the project
2) faculty participation in the implementation of the project
3) the faculty's perceived "ownership" of the project (i.e., self-determination)
4) faculty consensus with the project plan
5) faculty workload required by the project
6) the project director's experience in assessment activities
7) the faculty's experience in assessment activities
8) the project director's general academic experience
9) adequacy of budget, supplies and resources
10) administrative support
11) student support
12) previous experience with outcomes assessment
13) the content domain (e.g., physical science)
14) and the nature of the intended audience for the project's results

Assessment Methods

Assessment methods were defined by variables that described the strategic aspects of each project. These variables are important to questions of replicability because they focus on the "goodness of fit" between specific procedural aspects of each project. Variables assessed included:

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15) goal definition
16) selection of appropriate outcomes
17) the psychometric adequacy of measures used or developed
18) the success of data collection and reporting
19) the appropriate use of statistical analyses
20) sensitivity to multicultural issues
21) the use/development of multiple outcome measures
22) the comprehensiveness of reports describing the results of the project
23) and the utility/economy of procedures used

Assessment Outcomes

Outcome variables were used to capture the systematic growth and change that could be attributed to the assessment project. The following "direct" and "indirect" outcomes of the assessment projects were evaluated:

DIRECT

24) the survival of the project
25) attainment of additional funding
26) gains in student achievement
27) curricular development
28) improved teaching
29) better student feedback
30) the use of new methods of assessment
31) improved use of existing databases
32) and the dissemination of results

INDIRECT

33) improved student recruitment/retention
34) better general attitudes toward assessment
35) new sources of money for assessment
36) higher visibility of assessment
37) and external adoption of measures or methods developed

Conceptual Model

The conceptual model guiding the analysis is based on the assumption that key "environmental" and "methodological" variables will determine the nature of "outcome" variables. This model is illustrated in Figure 1. Included in each of the

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categorical "bins" are the specific variables to be addressed.

Data Collection

Information relevant to the assessment of the variables described above was obtained from multiple sources. First, copies of all project reports were obtained. All reports were studied and assessed by both researchers conducting this analysis. Independent conclusions concerning the "presence/absence" or "adequacy/inadequacy" of key variables were compared and evaluated. Where consensus on variable indicators could not be reached, that source of information was dropped from consideration. This process was especially important to the assessment of projects in reference to methodological variables (variables #15 to #23).

The second, and perhaps most utilized, source of data was the project directors themselves. A survey was developed and administered to each of the project directors. A copy of the survey and a detailed report of the results of this survey are presented in a later section of the text. Results of this survey were especially critical in determining the nature of environmental variables for each project. These results were also primary determinants of the project outcome variables.

Project directors were further utilized throughout the data collection period to fill in missing information and to provide updates on developments not available in the final project reports. A meeting with directors held in November at San Francisco State University yielded additional information on the

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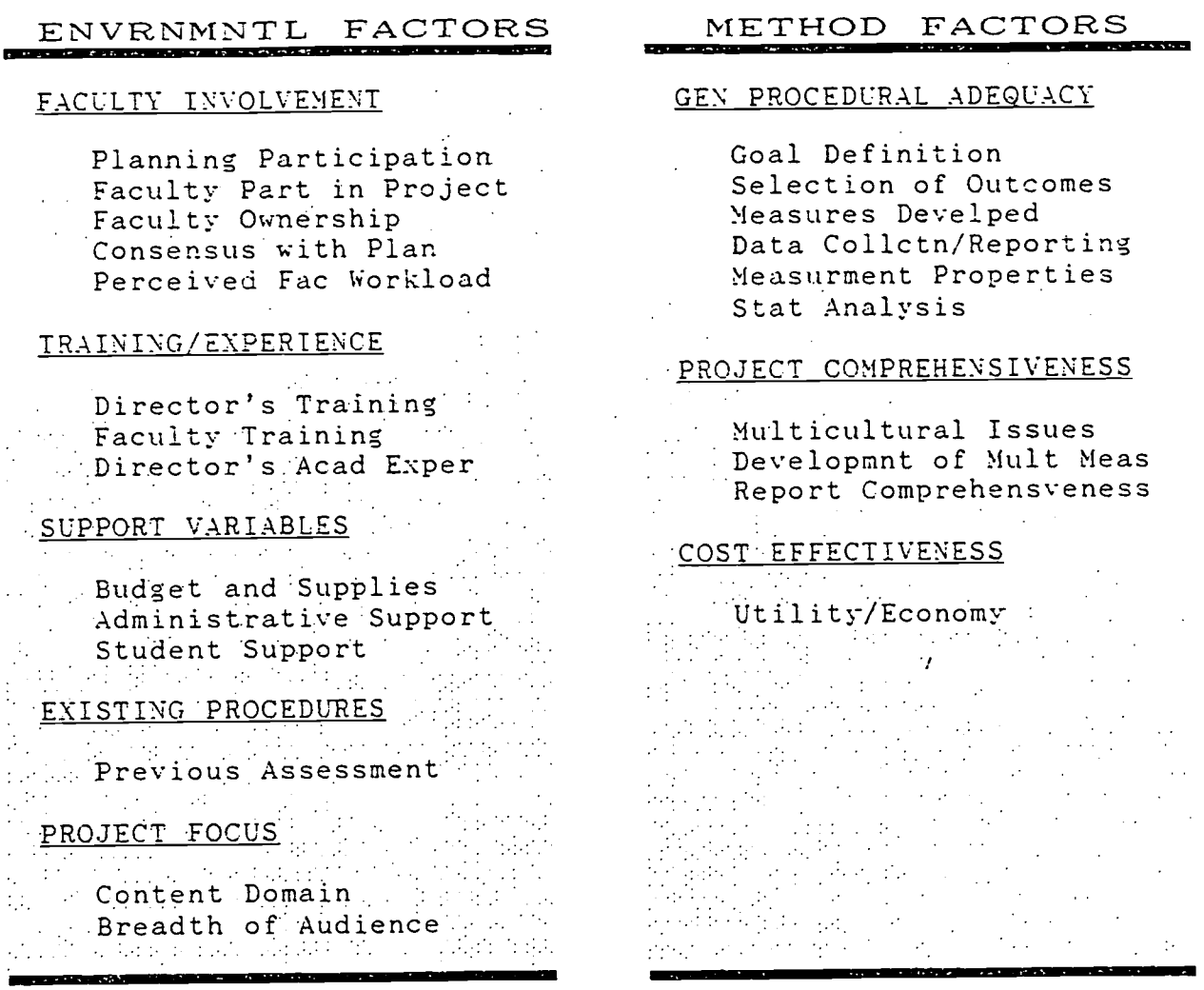
FIGURE 1: Conceptual Model



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assessment environment on individual campuses.

Telephone interviews with project directors continued into the final weeks of this research. A special effort was made to obtain additional focus concerning multicultural issues relevant to outcomes assessment. A telephone interview was conducted. The results of this phone interview and additional information obtained from project files enabled an evaluation of the multicultural validity of measures used to assess student outcomes in the projects. The guidelines utilized for this analysis and major conclusions are reported later in this text.

The final source of information utilized was the reports submitted by the external evaluators of the pilot projects. These were read last in an effort to maintain the objectivity of the researchers through the initial stages of the data collection. These reports were especially useful in supplementing observations concerning the methodological variables.

RESULTS

The data collection activities above provided three discrete steps in our report of the findings: 1) results from the survey of project directors, 2) results from an assessment of multicultural validity in the projects, and 3) results from a summary assessment of generalizability of variables across project sites. These are reported separately in three sections following.

RESULTS FROM THE SURVEY OF PROJECT DIRECTORS

This survey of pilot project directors was a preliminary data gathering step in a study designed to evaluate a series of student outcome assessment projects conducted in the California State University. Issues to be addressed by the final analysis which will utilize this data are: 1) the identification of general factors that contributed to the relative effectiveness of these fifteen CSU pilot projects, and 2) the assessment of potential for replicability of successful projects in other departments, CSU campuses, and colleges and universities across the nation.

Though the wide variety of programs being studied prohibits simple across-the-board comparisons, this survey attempted to tap certain contextual and methodological variables that may generalize across institutions and content areas. General aspects of each project's environment that were assessed by this survey included faculty ownership/commitment to the project, training/experience of the project personnel, external support obtained for the project, and previous experiences with and/or attitudes toward student outcomes assessment. Information relevant to the general methodology of each project was also obtained. This included data relevant to the number and nature of outcomes assessed, methods of measurement, and the comprehensiveness of data collected.

The survey also enabled project directors to describe the relative effectiveness of their projects in reference to such

variables as successful funding/continuation of assessment programs, successful development/use of outcome measures, improved faculty/student attitudes, improvements in curriculum and/or instruction, improved academic self-evaluation, and other indirect project outcomes. This data enabled the assessment of general relationships between contextual variables and subsequent project effectiveness. A copy of the survey instrument is attached in Appendix B.

Data Summary

Though fifteen projects are listed, one project involved discrete events at different locations within different departments. In the data description, these are treated as separate projects giving the analysis a total "n" of 17. There was only one duplication of responses for the same project. This duplication was adjusted for in variables requiring a "count" of representative projects.

Survey items 1 and 2 asked directors to report the number of faculty that participated in each project. The number of faculty involved in the initial planning of each project ranged from 2 to 100 with a mode of 4. The number of faculty involved in project implementation ranged from 2 to 400 (one project ended up university-wide in its second year) with a mode of 14.

Items 3-9 measured different aspects of faculty "ownership" of the project. The data revealed a wide range of responses.. Though there were some glaring exceptions, directors generally reported high levels of faculty participation in the

implementation of the project, support for the subsequent goals of the project, and consensus with the project plan. Projects differed significantly, however, in reference to the inclusion of faculty participants in the planning/development of the project, faculty agreement with the nature of student performance criterion, perceived work loads resulting from the project, and perceptions of ownership among faculty.

In response to the request for a description of any other factors related to faculty involvement and support, one director very simply summarized this point by reporting that "lack of staff support made implementation impossible." There was one report of faculty suspicion of the Chancellor's Office concerning how the results of the study might be used. One director reported that to garner support, they first took their proposed project to several faculty committees, including their faculty senate. Before they had a chance to consult with their own faculty, the senate returned their project as a new program mandate. Some quick diplomacy was applied, and good support was maintained.

Items 10 and 11 asked the director to rate the level of relevant training specific to student outcomes assessment for themselves and the project's participating faculty. Directors generally rated themselves as fairly sophisticated. There was more variance in reference to their participating faculty.

Items 12-14 asked for educational and experiential attributes of the project directors. All directors possessed

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terminal degrees in their areas. In general, they were experienced teachers with an average of 16 years in the classroom. Most directors were full professors, and all but four were tenured.

Items 12-14 asked for educational and experiential attributes of the participating faculty. Almost all held terminal degrees in their areas, a large majority were tenured, full professors. Directors also reported that participating faculty general had many years experience with an overall average of 17 years in the classroom.

When asked to describe special training or experience that may have facilitated the project, about half of the directors reported a fair to extensive amount of background specific to student outcomes assessment. Others reported related specialized skills in measurement, student retention, and program evaluation.

Most directors did not report extensive background for the other faculty participants, but several comments were made concerning how much was learned in the process of implementing the projects.

Items 15-16 asked directors to describe sources of additional funding/support they received for their projects in the initial year. Ten directors reported receiving additional funds beyond the required matching funds from their university. The most frequent source of additional support was money from the AAC/FIPSE grant. Three projects received additional money from on-campus sources.

Item 17 measured the director's perception of support for their project from the university's administration. Directors generally felt this source of support was good. Responses ranged from "4" to "7" with a mode of "7."

Items 18 and 19 measured the director's perception of student support for the project. Directors reported that students supported the project (response range of "4" to "7", with a modal response of "6"), but that students offered significant resistance to changes associated with the implementation of the assessment (response range of "1" to "6", with a modal response of "1").

Items 20-24 determined whether or not there were previously existing outcome assessment mechanisms/programs in place, and, if so, how these affected the project. Seven directors reported existing outcomes assessment. In item 21, four of these seven reported that the new program meshed well with existing programs. In item 22, four of the seven (not the same four) reported that the goals of their new project were consistent with the existing program's goals. In item 23, two directors reported that it was more true than false that existing negative attitudes adversely affected the implementation of their project. In response to item 24, two directors reported that it was more true than false that familiarity with outcomes assessment facilitated the implementation of their projects.

When asked in item 25 to describe in detail how any existing procedures or attitudes might have contributed to the

effectiveness of the pilot projects, responses were diverse. Five directors reported negative impact. Faculty suspicion and apathy were the major hurdles reported. One director reported that the faculty saw the project "... as a threat at worst and a waste of time at best."

Student suspicion and resentment of additional tests/workload were also reported. One director reported that faculty enthusiasm for assessment was the key to beating this obstacle; "...the average students...will cooperate in the development of alternatives for assessment if their faculty tell them it is important to do so."

There were four reports of positive impact. Faculty education and exposure to successful student outcomes assessment procedures was reported to have facilitated two of the projects. An existing faculty desire to clarify program goals was reported as a contributing factor to the success of one project.

In reference to the dissemination of their project reports (item 26), nine directors indicated that they had shared results beyond the reports requested by funding sources. Six projects have achieved nation-wide status via national organizations, conferences, or major publications.

The institutional level at which projects were implemented filled the entire range from a single selected class to a project that is now replicating the project at eighteen campuses nationwide. Altogether, three were applied to selected classes, five were department-wide, two were at the school level, three

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were university-wide, and three were at least system-wide.

Project goals (item 28) were as diverse as the programs they were intended to serve, and are consequently difficult to summarize. Many included the objective of testing the feasibility of outcomes assessment within the specific program type. Another common goal was the assessment of different types of external evaluators. The most common objective not directly related to the assessment process itself was the desire to clarify/develop programmatic objectives.

The types of outcomes assessed (item 29) also varied dramatically. They included: assessment of simple content knowledge; demonstration of specific process skills; student, alumni, faculty, and the public's attitudes toward the program; attainment of post-graduate goals (e.g., employment status, general satisfaction with preparation, employers' satisfaction with the program's graduates); and the development of specified attitudes/beliefs.

Many methods of outcome measurement were employed (item 30). These included written examinations (objective and essay), oral examinations, personal interviews, graded assignments, project evaluations, and attitudinal rating scales/surveys. The projects varied somewhat in how many methods of evaluation were used by each project. At least four used only a single type of measure.

Items 32-38 were used to assess the type of demographic information that was collected as part of the projects' data sets. Seven projects did not collect demographic information.

Three studies collected at least two demographic variables, and seven collected three or more.

Item 39 asked if a per student or per class cost was estimated for the project. No project reported the assessment or estimation of any such value.

Item 40 was used to determine how many projects have continued beyond the original year of funding. Seven projects have not been continued. Lack of funding was the main reason given for program closure. Ten directors reported that their project had continued (item 41). Of these, four had obtained no additional funding, and three were receiving very minimal departmental/university support. Of the three who reported receiving additional support, one was an API continuation, one was an AAC/FIPSE grant originating before the API grant, and one did not report its source.

Items 42-59 asked directors to assess the level of achievement of different potential project outcomes. Of those outcomes identified as direct outcomes (items 42-50), almost all directors reported development of good measures of student outcomes as an achievement of their projects. Most reported curricular improvements, increases in student feedback, clarification of instructional goals/objectives, increases in faculty assessment skills, and successful dissemination of information to other departments/schools/universities. As a whole, directors were less optimistic about gains in student achievement, improvement in teaching by the faculty involved, and

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new or improved uses of existing databases.

Of those outcomes identified as indirect outcomes (items 51-59), most directors reported improved self-evaluation of the academic program, improved faculty attitudes toward assessment activities, and greater visibility of assessment activities. Overall, somewhat less impact was perceived on student recruitment, student attitudes toward assessment activities, and institutional attitudes toward assessment. Directors reported less success with the development of new sources of revenue/support. Seven directors reported significant achievements in regards to the adoption of methods developed by other department or institutions.

When asked to describe other significant outcomes (item 60), four directors reported a significant deal of "self-improvement" in reference to their personal understanding of student outcomes assessment, their ability to teach, and clarification of their program's objectives. Two also referred to similar improvements enjoyed by all faculty participating in the project. Two directors reported that the project had resulted in significant changes/improvements in their programs' curriculum and definition of objectives. One director reported that the project formed the basis for a prototype assessment procedure that is being piloted for use statewide. On the negative side, one director's final observation was that the project "...highlighted the incredible apathy of most CSU faculty regarding the utility of outcomes assessment."

Summary

Survey responses indicate a good deal of variance in what we referred to as "faculty ownership" of the project. Some directors described high levels of faculty suspicion. Given that three of these variables were highly predictive of project outcomes and that faculty participation and support is generally acknowledged as a critical link to successful outcomes assessment, it will be important to further investigate how faculty involvement and support can be successfully achieved.

Responses indicate that, on the average, this group of project directors was a very experienced group, both in years at the university and in special training relevant to outcomes assessment. This may appear to present a problem in that it would be difficult to match the sophistication of these directors in future waves of outcomes assessment initiatives within this system; however, data collected here did not indicate that such experienced was a prerequisite to project outcomes.

Obtainment of additional funding for the original projects and for continuations of the projects was somewhat sparse. It goes without saying that this will not soon improve. Funding was clearly described as a major hurdle to further development of assessment programs. Somewhat discouraging was the fact that success in achieving project outcomes was not related to subsequent success in obtaining continuations of funding.

Significant levels of student resistance were reported. Faculty promotion of the program was suggested as a key to

diluting this problem. Given the relationship between student support and direct outcomes, specific recommendations/techniques for introducing assessment programs to students and maintaining student support should be sought.

Five directors reported adverse impact due to faculty experience with pre-existing programs of outcomes assessment. Four described positive effects resulting from experiences with existing programs. Since it appears that pre-existing negative attitudes toward outcome assessment can be fatal to a new project, further efforts should be made to determine how programs can develop a positive atmosphere around existing assessment procedures.

Several projects have been very successful in the dissemination of their results. Recognition and visibility should improve attitudes toward future outcomes assessment programs.

Given current financial circumstances, it may be unfortunate that no cost estimates were produced. Directors were not asked to compute such a figure, but meaningful start-up and maintenance costs might still be estimated by using project reports and some additional information which may be provided by the directors.

Ten projects have continued, but most appear to be doing so with very minimal financial support. One aspect needing some clarification is how much of the original or intended program was cut due to lack of funds. It also needs to be determined how much is being maintained "out of the hides" of dedicated

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directors who refuse to let their projects die. Such sacrifices could not be expected to transfer to most future initiatives.

The wide variety of circumstances and results obtained from this set of pilot projects provides a rich potential source of information. The information from this survey will be further consolidated with project reports and other additional information in an attempt to "tease out" clues that might be utilized to direct future initiatives. The goal will be to provide policy makers with a clear, organized assessment of what has been successfully implemented, and a realistic picture of the obstacles they will face in their efforts to institutionalize programs of student outcomes assessment.

RESULTS FROM THE ASSESSMENT OF MULTICULTURAL VALIDITY

In the technical language of educational research, measurement accuracy is defined and understood as a matter of test validity. Consistent with the criteria more generally stated above, a valid test is one that provides an adequate means for making good inferences. When we develop a procedure for the purpose of assessing student outcomes, the goal is to obtain "scores" that will enable us to reach meaningful conclusions concerning the adequacy of current teaching and learning, provide direction for future interventions, and enable good decisions relevant to resource allocations within educational systems.

The ability to derive the underlying "meaning" of these assessment "scores" from which we hope to make valid inferences is complicated by the question of whether or not scores from a

common test (or any evaluative process) can be interpreted to mean the same thing for different individuals. Where individuals being measured are not homogeneous in reference to social experiences, language, values, and learning styles, can their abilities, attitudes, beliefs, or aptitudes be adequately assessed and interpreted using a common measure for all? This question is one of multicultural validity.

Data Collection

The diverse, multicultural environments of many of the schools within the California State University System provide an excellent field of study for the question of multicultural adequacy of assessment procedures. Data was collected from reports and articles presented or published by the project directors of experimental outcomes assessment studies. Additional information was obtained in a phone survey of directors. The structure used for this interview is attached in Appendix C.

It was apparent from this data that not all projects obtained demographic breakdowns of their data. This excluded them from contribution to this analysis.

For those who had identified results by groups, several were hesitant to release specific information concerning the differences they had uncovered. Very few projects included group difference information in their final reports. The telephone interviews gathered enough information to make the analysis possible. However, some directors resisted releasing specific

statistics due to an expressed fear that such data would be misinterpreted as racist in motivation.

But many differences did exist, not only in standardized test results, but in almost every type of outcomes assessment attempted. Awareness of these differences is a necessary first step in developing policy to address inequities.

Validity Paradigm Used for Assessment

The paradigm of measurement validity was useful because it provided a means of approaching and organizing a highly diverse set of data. By stepping through the conceptual stages of content, criterion, and construct validity, one first accumulates isolated pieces of relevant information concerning the nature of measures used and comparative assessment outcomes obtained from all projects (content analysis). Once these are described and potentially problematic areas are identified, the process continues with attempts to better understand these measures by evaluating pairwise associations between these assessment variables and other variables measured within the same study (criterion analysis). Finally, an attempt is made to build a logically consistent structure of relationships that seem to generalize across studies (construct analysis).

All attempts at defining validity contribute to the same goal. One wishes to clarify the meaning of the measure so that better inferences might be made on the basis of the scores. For assessment scores, we need to better understand what individual attributes are represented by or contribute to the score. This

will enable more accurate conclusions concerning the multicultural adequacy of the measures. The three stages of validity determination and their genaral purpose are summarized in Figure 2.

Multicultural Content Validity

Utilizing the issue of measurement validity as the guiding principle for this evaluation, the first step was to address the simple question of content validity. Classically defined, content validity refers to the degree to which the assessment procedures represent the appropriate content of what we wish to measure, and whether the scoring system for individual proficiency is correspondent with what it takes to score high or low on the variable in question. In reference to our multicultural concern, the issue must be expanded to include an evaluation of the appropriateness of the assessment's content for all students subjected to that assessment.

For example, scores from timed, multiple-choice tests are often used to assess outcomes of content-specific programs. Though it may not be made explicit, reading and comprehension of English are an integral part of the "content" of such a test. It is easy to see how this part of the test's "content" disadvantages non-native English speakers, with differential performance the result.

Accordingly, the first "flagging" device we used for diagnosing the multicultural validity of assessment procedures in these projects was the simple identification of differences among

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Figure 2

MEASUREMENT VALIDITY PARADIGM

CONTENT VALIDITY:

> APPROPRIATE CONTENT
> APPROPRIATE PROCEDURES
> APPROPRIATE SCORING

CRITERION VALIDITY:

> MEANINGFUL, PREDICTABLE PAIRWISE RELATIONS

CONSTRUCT VALIDITY:

> MEASURE IN CONTEXT OF SYSTEM OF VARIABLES (NOMOLOGICAL NET)

ULTIMATE GOAL OF ALL STEPS:

> CLARIFY MEANING OF MEASURES
> ENABLE BETTER INFERENCES

groups on assessment scores. The logic of this step in reference to content validity is that significant group differences in assessment outcomes indicate assessment procedures that are problematic for certain groups. These mean differences across groups could indicate assessment bias or valid discrepancies in underlying achievement.

The simple identification of group differences provides very little information about the causes or meanings of the differences in scores, but it spotlights circumstances which require further investigation. It must also be recognized that an absence of group differences on an assessment does not guarantee that these scores can be interpreted to mean the same for all groups, but such circumstances seem to warrant less immediate concern.

Some of the key outcome assessment differences that were noted from the pilot projects are listed in Figure 3. These included group differences on standardized tests, other objectively measured variables, and some differences that were subjectively noted by project directors.

Multicultural Criterion Validity

The second sweep at interpreting the multicultural adequacy of our assessment instruments was based on the general approach of criterion validity. This is a question of how well scores correspond to or predict scores on another variable. Where group differences exist, a deeper understanding of the meaning of these group differences may be obtained by evaluating the nature of the

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Figure 3

PILOT PROJECTS:
SELECTED GROUP DIFFERENCES

STANDARDIZED TESTS:

- ACT COMPOSITE
- CBEST SCORES
- EPT

OTHER OBJECTIVE MEASURES:

- GPA
- WRITING EFFICACY
- LEARNING STYLES
- WRITTEN ESSAYS
- TIME TO TEST COMPLETION
- ATTITUDES TOWARD GE COURSES
- PERCEIVED VALUE OF MAJOR
- CHALLENGING WRITING COURSE
- UPPER DIVISION WRITING EXAM

SUBJECTIVE OBSERVATIONS:

- FRUSTRATION
- DISCOURAGEMENT
- ATTRITION
- VERBAL COMPREHENSION
- BASIC SKILLS
- LINGUISTIC/CULTURAL BIAS

pairwise relationships between the assessment scores and other variables.

For example, if one knows the number of years that a student has spoken English, and this variable is highly predictive of the scores on the outcome assessment, this relationship provides some insight to the appropriate interpretation of the assessment score. A non-relationship is potentially just as informative. For instance, an assessment score which fails to predict post-graduate performance for a certain group of students immediately calls to question the multicultural validity of that assessment measure.

In the projects studied, examples of several interesting (and often recurring) pairwise relationships were reported. Some of these are noted in Figure 4.

Multicultural Construct Validity

Ultimately, one must attempt to compose the "big picture." Construct validity provides the model for the depth of understanding we must strive to attain. Developing construct validity for an outcome measure enables the clarification of the meaning of the measure, understanding of how it relates to other previous or concurrent events/variables, and the use of the measure to predict subsequent behaviors or attitudes. Multicultural construct validity is complicated by the fact that these three aspects of the measure may vary by group.

We cannot claim to have developed a comprehensive definition of the system (i.e., "nomological net") within which measures of

Figure 4

PILOT PROJECTS:
SELECTED PAIRWISE RELATIONS

BASIC SKILLS	--->	LIBERAL ARTS GPA
BASIC SKILLS	--->	VALUE OF MAJOR
BASIC SKILLS	--->	OCCUPATIONAL PRESTIGE
BASIC SKILLS	--->	QUALITY OF DEGREE
YEARS ENGLISH	--->	COMPOSITION SCORES
% OF MINORITIES	--->	DIFFERENTIAL TREATMENT
DIFFERENTIAL TREATMENT	--->	VALUE OF MAJOR
FACULTY ATTITUDES	--->	VALUE OF EDUCATION
FACULTY AVAILABILITY	--->	VALUE OF EDUCATION
PRIMARY LANGUAGE	--->	UDWE VS. UD COMP COURSE
PRIMARY LANGUAGE	--->	UD COMP COURSE GPA
CBEST PERFORMANCE	--->	PERSISTENCE

student outcomes exist. In fact, this "net" will most certainly vary somewhat by content area; nevertheless, we believe our evaluation provides evidence of some consistent structural patterns. The major pieces of this structure are presented in Figure 5.

In the California State University studies, language background, basic learning skills, and climate in the major appear to be key initial variables in the model. These were clearly predictive of eventual attainment of skills in the major, standardized test scores, GPA, and attrition. In trun, these collective undergraduate experiences are associated with terminal outcomes such as perceived value of the major, quality of the degree program, and occupational prestige.

Summary

This model provides the basis for a very preliminary diagnosis of multicultural validity. The evidence suggests that the meaning of certain measures observed may potentially differ by group. Basic language skills are highly predictive of many types of assessment scores, and, consequently, must be confounded with what these assessment procedures are attempting to measure. Differences by groups in the magnitude of relationships between assessment scores and subsequent outcomes (in work or additional schooling) would further suggest that measures may successfully tap underlying achievement in some students, but not for others.

A key variable contributing to the final description of the relative success or failure of student outcomes assessment in the

Figure 5

PILOT PROJECTS: PROPOSED COMPONENTS OF THE NOMOLOGICAL NET

Precursors	Educational Experience	Outcomes
Language Background	Skills in the Major	Occupational Prestige
Basic Learning Skills	Standardized Test Scores	Perceived Value of the Major
Climate in the Major	GPA/Course Performance	Perceived Quality of the Degree
	Attrition	

California State University system will be the ability of the data collected from these studies to define the adequacy of our educational procedures/environments for all groups of students represented within the system. The results of this initial investigation of multicultural validity must be considered preliminary at best. Only continued accumulation of data will enable any final conclusion concerning the adequacy of assessment procedures. Can we safely infer that our assessment tools provide meaningful information about students from all groups? This is the question that must direct the selection of measures, the development of experimental hypotheses, and the subsequent addition of pieces to the puzzle of multicultural validity.

RESULTS FROM SUMMARY ASSESSMENT OF GENERALIZABILITY OF VARIABLES ACROSS PROJECT SITES

Data organization was achieved in a manner consistent with the recommendations for qualitative data analysis prescribed by Miles and Huberman (1984). All observations, comments, and survey scores were condensed and entered in a highly abbreviated form onto a "meta-matrix." This master chart contains information relevant to all thirty-seven variables for all projects considered complete enough for inclusion in the final assessment. In early versions of the chart, the basic principle was inclusion of all relevant data. A small, condensed sample illustrating the layout of this meta-matrix is attached in Appendix D. Actual data cells were much more comprehensive.

For this final analysis, projects for which we lacked

comprehensive data were excluded. One project assessed three different disciplines on three different campuses. Because the five sources providing information for this analysis were describing discrete event from what were apparently very different experiences, these data sources were treated as five different "sites" for this analysis. The total "n" of sites ultimately used was sixteen.

On the basis of information represented in this matrix, a qualitative categorization of all projects on all variables was completed. For each project, all variables were classified as:

4 - strongly present/achieved,

3 - partly present/achieved,

2 - weakly present/achieved,

1 - absent/not achieved.

The results of this classification are presented in Table 2. This display is referred to by Miles and Huberman (1984) as a "Site-Ordered Descriptive Meta-Matrix." Though the "values" are the result of qualitative assessment and therefore include a certain unavoidable level of judgement, almost all are based on multiple sources of information. The agreement between sources was generally very compelling.

Using the proposed research conceptualization, project outcomes (direct and indirect) would logically represent dependent measures. Environmental and methodological variables would be the multiple predictors. If the data were interval, and the n of projects greater, the analysis of choice would be

Table 2: Project Raw Scores on All Variables

VARIABLES	PROJECTS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLANNING PARTICIPATION	1	2	2	1	2	3	1	2	3	1	4	2	1	1	4	4
FAC PART IN PROJECT	2	4	2	1	2	2	4	2	3	2	4	3	2	4	1	4
FACULTY OWNERSHIP	1	4	2	1	1	2	3	1	3	1	4	2	1	3	1	4
CONSENSUS WITH PLAN	3	4	2	1	3	2	2	3	3	3	4	3	1	3	1	3
PERCEIVED WORKLOAD	3	4	3	1	1	2	3	2	3	4	2	4	4	4	1	1
DIRECTOR'S TRAINING	3	3	3	1	2	3	3	3	4	4	4	3	4	2	3	3
FACULTY TRAINING	2	4	1	1	1	3	2	1	3	1	4	2	1	1	1	3
DIRECTOR'S ACAD EXP	4	4	3	4	1	3	4	3	3	3	2	4	2	2	3	3
BUDGET & SUPPLIES	3	3	3	3	2	3	1	1	3	4	1	4	4	4	2	3
ADMINISTRATIVE SUPPORT	3	3	4	1	4	3	4	3	3	4	4	3	4	4	3	4
STUDENT SUPPORT	3	3	4	1	4	3	3	2	4	2	3	2	3	4	2	4
PREVIOUS ASSESSMENT	1	4	2	4	1	1	1	3	4	2	4	4	4	1	1	1
MESH WITH EXISTING PROG		3	3					1	3	4	2	2	3			
CONTENT DOMAIN	1	1	1	1	2	3	3	1	1	2	1	3	2	2	3	3
BREADTH OF AUDIENCE	2	2	2	2	2	3	2	3	2	4	2	3	4	2	1	4
GOAL DEFINITION	2	2	2	2	2	3	3	2	4	4	4	2	4	2	4	4
SELECTION OF OUTCOMES	2	2	2	2	2	3	3	2	4	4	4	3	4	4	4	4
MEASURES DEVELPED	2	2	2	2	2	1	3	3	3	4	3	2	4	4	3	3
DATA COLLCTN/REPORTING	2	2	2	2	2	1	3	2		4	3	2	4	4	3	3
MEASURMENT PROPERTIES	1	1	1	1	1	1	1	1		3	2	1	3	3	2	4
STAT ANALYSIS	1	1	1	1	1	1	1	2		3	1	2	3	3	2	3
MULTICULTURAL ISSUES	1	1	1	1	1	1	2	1		4	3	4	4	4	3	4
DEVELOPMENT OF MULT MEAS	3	4	3	3	3	1	4	4	4	4	4	4	4	4	4	3
REPORT COMPREHENSIVENESS	2	2	2	2	2	2	2	3		4	3	3	4	3	3	3
UTILITY/ECONOMY	2	2	2	2	2	1	2	2	3	2	2	2	2	2	3	2
PROJECT CONTINUING	3	1	3	1	1	1	4	4	3	4	4	3	3	1	1	3
ADDITIONAL FUNDING	3	1	1	2	1	1	4	1	1	3	4	1	1	1	1	3
GAINS IN STUDENT ACH	1	2	1	1	4	1	3	2	1	1	2	1	1	4	1	2
CURRICULAR IMPACT	2	3	1	2	2	3	1	3	3	3	1	3	3	4	1	3
BETTER TEACHING	2	2	2	1	4	3	3	3	3	3	3	3	3	4	1	
FEEDBACK TO STUDENTS	3	4	1	3	4	1	3	3	4		4	3	3	4	1	
NEW MEASURES DEVELOPED	3	3	3	2	3	1	3	3	4	4	4	3	4	4	1	3
BETTER DATA USE	1	2	1	1	3	1	3	1	4	4	1	4	4	4	1	1
DISSEMINATION OF RESULTS	1	4	1	1	1	3	4	3	4	4	3	3	4	4	1	4
RECRUITMENT/RETENTION	1	2	1	1	1	2	3	2	1		2	1		1	1	2
ATTITUDES TOWARD ASSMNT	1	3	2	1	2	2	3	2	3	3	3	3	3	3	1	
MONEYS FOR ASSESSMENT	1	2	1	1	1	2	1	2	1	2	1	1		1	1	
VISIBILITY OF ASSESSMENT	1	3	3	1	1	2	4	4	3	4	4	3	4	4	1	
EXTERNAL ADOPTION	1	2	1	1	1	2	1	1	1		3	3	4	1	1	
AVG DIRECT OUTCOMES	2.11	2.44	1.56	1.56	2.56	1.67	3.44	2.56	3.00	3.25	2.89	2.67	2.89	3.33	1.00	3.17
AVG INDIRECT OUTCOMES	1.00	2.40	1.60	1.00	1.20	2.00	2.40	2.20	1.80	3.00	2.60	2.20	3.67	2.00	1.00	2.00
OVERALL AVG OUTCOME	1.56	2.42	1.58	1.23	1.89	1.83	2.92	2.38	2.40	3.13	2.74	2.43	3.28	2.67	1.00	2.58

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multiple regression. In a multiple regression paradigm, critical factors that should be attended to in any replication would be those that accounted for the most variance in the dependent measure (program outcomes).

However, the data presented in Table 2 is qualitative, and the n of projects is sixteen. Nevertheless, the problem is conceptually the same. One must identify the variables that were consistently associated with project effectiveness. The task is to determine which predictor variables most consistently co-vary with outcomes. Good predictors are those whose qualitative categorization is most consistent with the qualitative categorization of project outcomes.

Because a project's relative success should not be judged by a single outcome variable, and because there should be some resistance to the temptation to over-analyze qualitative data, outcomes were combined. Subsequent analyses were conducted using: 1) the average of all outcomes, 2) the average of outcomes categorized as direct outcomes, and 3) the average of indirect outcomes (refer to page 6 for a precise listing of these outcomes).

The next step necessary to enable comparison across variables is a standardization of scores. Though the "scale" used for classification of all predictor and outcome variables was the same (1 through 4), the mean and standard deviation of the resulting distributions for each variable was different. This was resolved by transforming all scores to z-scores. The

resulting standardized site-ordered descriptive meta-matrix is attached in Appendix E. These scores represent the project's deviation above or below each given variable's mean in standard deviation units. Scores from all variables are now represented in reference to their place on a common distribution that has a mean of zero and a standard deviation of one.

"Consistency" between predictors and outcomes was assessed by computing the squared deviations between each standardized score and the average "outcome" (overall, direct, & indirect) for the project associated with that standardized score. The squared deviations between each standardized predictor and the overall, direct and indirect outcomes are attached in Appendices F, G, AND H.

Finally, these squared deviations were summed across project sites, and divided by the number of projects to produce a value conceptually similar to variance (the difference being that the source of deviation was between each predictor score and its project's outcome score rather than between each predictor score and the average of that predictor score across sites). The resulting "variance with outcomes" across sites will be smallest for those variables that were most consistently related to outcomes. Larger values indicate that the classifications assigned to that variable were not as predictive of the project outcomes.

Results of this analysis are presented in Tables 3, 4, and 5. Because the data is qualitative, there can be no assessment

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of statistical probability or significant differences. The predictor variables are simply ranked in the order of their consistency with outcomes: overall, direct, and indirect. Top-ranked variables are those whose classifications were most consistent with project outcomes.

These results are summarized in Table 6. This table enables comparison of the relative importance of predictors across different combinations of project outcomes. Predictors are also organized into groups by similarity.

ENVIRONMENTAL PREDICTORS

Faculty Involvement Variables

Two faculty variables were consistently toward the top of the respective rank orderings. "Faculty Participation" and "Perceived Faculty Workload" appear to be potentially important indicators of assessment success. The first is most closely associated with those outcomes identified as "direct" outcomes. The second is more closely associated with "indirect" outcomes.

"Faculty Ownership" and "Faculty Consensus with Plan" were also relatively good indicators, especially for direct outcomes. "Faculty Participation in Planning" appears to have little to do with project outcomes.

Training/Experience with Student Outcomes Assessment

Project outcomes were associated with the project director's efficacy in outcomes assessment, especially indirect outcomes. Faculty training and the project director's general academic

Table 3: Predictor Variables Rank Ordered by Consistency with Overall Outcomes

Predictor Variables	Rank Order	Variance with Overall Outcomes
Adequacy of Measures Dev.	1	.73
Intended Breadth of Aud.	2	.75
Administrative Support	3	.76
Faculty Part. in Project	4	.77
Director's Training in SOA	5	.91
Perceived Faculty Workload	6	.95
Sensitivity to Mult Issues	7	1.06
Development of Mult Measures	8	1.10
Selection of Outcomes	9	1.12
Measurement Properties	10	1.22
Statistical Analysis	11	1.25
Faculty Consensus with Plan	12	1.27
Project Goal Definition	13	1.28
Faculty Ownership of Project	14	1.31
Data Collection/Reporting	15	1.39
Existence of Previous SOA	16	1.50
Faculty Training in SOA	17	1.60
Student Support of Project	18	1.60
Adequate Budget/Supplies	19	1.71
Content Domain	20	1.79
Report Comprehensiveness	21	1.80
Utility/Economy of Project	22	2.32
Director's Academic Exper.	23	2.41
Fac Participation in Planning	24	2.43

Table 4: Predictor Variables Rank Ordered by Consistency with Direct Outcomes

Predictor Variables	Rank Order	Variance with Direct Outcomes
Faculty Part. in Project	1	.56
Adequacy of Measures Dev.	2	.80
Administrative Support	3	.89
Faculty Consensus with Plan	4	1.00
Intended Breadth of Aud.	5	1.09
Development of Mult Measures	6	1.09
Faculty Ownership of Project	7	1.23
Selection of Outcomes	8	1.23
Perceived Faculty Workload	9	1.25
Sensitivity to Mult Issues	10	1.27
Student Support of Project	11	1.31
Director's Training in SOA	12	1.32
Measurement Properties	13	1.37
Statistical Analysis	14	1.48
Project Goal Definition	15	1.54
Faculty Training in SOA	16	1.63
Data Collection/Reporting	17	1.64
Content Domain	18	1.83
Existence of Previous SOA	19	1.85
Adequate Budget/Supplies	20	1.86
Utility/Economy of Project	21	2.07
Report Comprehensiveness	22	2.38
Director's Academic Exper.	23	2.41
Fac Participation in Planning	24	2.45

Table 5: Predictor Variables Rank Ordered by Consistency with Indirect Outcomes

Predictor Variables	Rank Order	Variance with Indirect Outcomes
Intended Breadth of Aud.	1	.66
Director's Training in SOA	2	.72
Perceived Faculty Workload	3	.86
Administrative Support	4	.89
Adequacy of Measures Dev.	5	.92
Sensitivity to Mult Issues	6	1.06
Project Goal Definition	7	1.17
Selection of Outcomes	8	1.17
Statistical Analysis	9	1.20
Faculty Part. in Project	10	1.22
Measurement Properties	11	1.24
Existence of Previous SOA	12	1.25
Development of Mult Measures	13	1.29
Data Collection/Reporting	14	1.36
Report Comprehensiveness	15	1.44
Faculty Ownership of Project	16	1.53
Adequate Budget/Supplies	17	1.62
Faculty Training in SOA	18	1.66
Faculty Consensus with Plan	19	1.69
Content Domain	20	1.80
Student Support of Project	21	1.96
Fac Participation in Planning	22	2.32
Director's Academic Exper.	23	2.33
Utility/Economy of Project	24	2.49

Table 6: Variance between Predictors and Outcomes with Predictor Variable Rank Orders*

Predictor Variables	Varnce with All Outcomes	Varnce with Dir Outcomes	Varnce with Ind Outcomes
Fac Part in Planning	2.43 (24)	2.45 (24)	2.32 (22)
Faculty Part. in Project	0.77 (4)	0.56 (1)	1.22 (10)
Fac Ownership of Project	1.31 (14)	1.23 (8)	1.53 (16)
Fac Consensus with Plan	1.27 (12)	1.00 (4)	1.69 (19)
Perceived Faculty Workload	0.95 (6)	1.25 (9)	0.86 (3)
Director's Training in SOA	0.91 (5)	1.32 (12)	0.72 (2)
Faculty Training in SOA	1.60 (17)	1.63 (16)	1.66 (18)
Director's Academic Exper.	2.41 (23)	2.41 (23)	2.33 (23)
Adequate Budget/Supplies	1.71 (19)	1.86 (20)	1.62 (17)
Administrative Support	0.76 (3)	0.89 (3)	0.89 (4)
Student Support of Project	1.60 (17)	1.31 (11)	1.96 (21)
Existence of Previous SOA	1.50 (16)	1.85 (19)	1.25 (12)
Content Domain	1.79 (20)	1.83 (18)	1.80 (20)
Intended Breadth of Aud.	0.75 (2)	1.09 (5)	0.66 (1)
Project Goal Definition	1.28 (13)	1.54 (15)	1.17 (8)
Selection of Outcomes	1.12 (9)	1.23 (7)	1.17 (7)
Adequacy of Measures Dev.	0.73 (1)	0.80 (2)	0.92 (5)
Data Collection/Reporting	1.39 (15)	1.64 (17)	1.36 (14)
Measurement Properties	1.22 (10)	1.37 (13)	1.24 (11)
Statistical Analysis	1.25 (11)	1.48 (14)	1.20 (9)
Sensitivity to Mult Issues	1.06 (7)	1.27 (10)	1.06 (6)
Develpmnt of Mult Measures	1.10 (8)	1.09 (6)	1.29 (13)
Report Comprehensiveness	1.80 (21)	2.38 (22)	1.44 (15)
Utility/Economy of Project	2.32 (22)	2.07 (21)	2.49 (24)

* Rank Orders in ( )

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background and experience were not as closely tied to project results.

Support Variables

Administrative support was closely tied to project outcomes, both direct and indirect. Adequacy of budget, supplies, and other institutional resources was not closely tied to project results. Student support appears only moderately associated with direct outcomes.

Existing Student Outcomes Assessment Procedures

Whether or not formal programs for or methods of student outcomes assessment existed prior to the initiation of the pilot projects was not closely associated with project results. Prior experience with assessment did not seem to have a consistent positive or negative effect on direct or indirect outcomes.

Project Focus

The content area in which the project occurred had little to do with the relative success of the project. However, the intended breadth of the audience (who and how many individuals/organization I expect to learn about the results of my project) was very closely associated with outcomes, especially indirect outcomes.

General Procedural Adequacy

The single most critical variable from this category was the development of good measures of student outcomes. The creation of good measures was predictive of project results, direct and indirect. Appropriate selection of outcomes to measure was also

closely associated with project outcomes.

"Project Goal Definition and the adequacy of "Statistical Analyses" conducted were moderately tied to indirect outcomes. These variables along with "Data Collection/Reporting" and the reporting of "Measurement Properties" did not appear to co-vary tightly with project results.

Project Comprehensiveness

The "Development of Multiple Measures" of student outcomes and "Sensitivity to Multicultural Issues" appeared moderately associated with project outcomes. The comprehensiveness of the reports made available were not closely related to project outcomes.

Cost Effectiveness of Project

The "Utility/Economy" of the projects' assessment procedures was near the bottom of the rank ordering. Apparently expensive projects in terms of their dollars spent to students assessed were not always the richest in results.

Summary

It was expected that faculty involvement would be critical to project outcomes. Consequently, it was no surprise that faculty participation in the project was ranked number one in its association with the direct, intended outcomes of each project. Faculty consensus with the project plan, ownership of the project, and perceived workload were also ranked in the top ten in reference to direct outcomes.

Perceived workload appeared especially critical to indirect

outcomes. Perhaps as workload increases, it becomes less likely that indirect outcomes will be realized. Workload would also seem especially salient to the development of attitudes toward outcomes assessment (one of the indirect outcomes).

Somewhat surprising was the apparent unimportance of involving participating faculty in the early stages of project planning. In the general management literature, it is often suggested that participative planning of projects is a good strategy for insuring project participation. Apparently in the academic setting, it is only critical that you do an adequate job of "selling" your plan once it is developed.

Of the three factors describing the training and background of project participants, only the project director's training and experience specific to student outcomes assessment ranked very high in association with outcomes. This factor was especially critical to the attainment of indirect outcomes. This result is logical given that the director was generally responsible for the adequacy of project goals and methods.

Nothing happens without administrative support. In all hierarchies, policy tends to come from the top down. Though a goal of the CSU system is to establish faculty-initiated outcomes assessment, these initiatives will most likely fail without the support of academic administrators. These individuals are in the position to set the "tone" in reference to the academic legitimacy of such efforts. Unless outcomes assessment efforts are rewarded, it will be difficult to maintain motivation to

assess student outcomes.

Student support did not rank high. Though this source of support was assessed through the eyes of the project directors rather than from the students themselves, this result does not appear unreasonable.

What does seem somewhat surprising is the apparent unimportance of adequate budget and supplies. Some insight into this result was obtained in discussions with project directors about how much of their project was coming "out of their hide." The efforts of some directors clearly went beyond what might have been expected given the modest budgets they were receiving for their administration of each project. This phenomenon was more likely to occur if the director was working in a content area for which outcomes assessment research could be considered legitimate professional development or for senior faculty members who were no longer struggling to achieve tenure or promotion.

Another possible explanation for the inconsistency between the adequacy of budget/supplies and project success would be the inherent differences in requirements for adequate assessment procedures across different content areas. It may be possible that adequate assessment can be achieved for relatively small costs in some disciplines, but will tend to be very expensive in others. Consequently, adequate results might be obtained for some even when resources are tight while others will find assessment prohibitive without adequate budgetary support.

Whether or not the project was initiated in an environment

that currently included some type of formal outcomes assessment did not appear to have a critical impact on project outcomes. The good news of this result is that projects breaking new ground do not necessarily have to anticipate damaging levels of resistance. The bad news may be that previous experience with outcomes assessment apparently may not guarantee that new initiatives will be welcomed with open arms.

There was some expectation that perhaps the content area in which the project occurred might have considerable impact on the relative success of the project. This may disappoint some educational or behavioral science researchers who might have liked to assume they had a corner on this part of the research market. This is a good result for a system that hopes to initiate outcomes assessment across a universe of content domains.

The tight association between the intended breadth of the audience for the project's results and project outcomes is somewhat surprising. In general, this association is logical in that the excellence of project outcomes should be related to how many individuals or organizations with which the director intends to share the results. This result may also reflect the director's experience and enthusiasm for student outcomes assessment. As previously observed, project director efficacy in outcomes assessment was closely associated with project outcomes.

In reference to general procedural adequacy, the most important aspect of the assessment projects appeared to be the

adequacy of the measures they developed or adopted. It is highly logical to expect that project success would hinge on the ability of the measures used to reliably and validly measure student outcomes. This process begins with the selection of appropriate outcomes to measure. This aspect of procedural adequacy was also closely associated with project outcomes.

Other variables in this category, though not highly ranked in their association with direct outcomes, were toward the top of the list in relation to indirect outcomes. Much of this relationship appeared dependent upon the association with the indirect outcome of external adoption. Those projects bound for adoption were generally the most precise in the definition of project goals and most ambitious and accurate in the production of statistical analyses.

The relatively high ranking of "sensitivity to multicultural issues" and the development of multiple measures may again reflect the sophistication of the project director in reference to good outcomes assessment. It is also reasonable to expect projects that developed or used more than one form of assessment to be more successful.

Sensitivity to multicultural issues would appear especially relevant to the potential for recruitment and retention of under-represented students. This would partially explain this variables relatively high ranking in reference to indirect outcomes.

The nature of final project reports varied widely. The low

association between the comprehensiveness of project reports and project outcomes might indicate that much occurred that was not completely reported. Many directors indicated that deadlines fell before they had time to adequately process the project results. Some compensated by disseminating results via other channels (regional and national presentations, journal publications). Though this project followed up and received many of these reports, it appears that much information from successful, comprehensive projects was lost to the CSU system due to the fact that final reporting was required before assessment procedures could be adequately evaluated.

The cost-effectiveness of outcomes assessment was near the bottom of the list in its association with direct and indirect outcomes. This is a perfectly reasonable result given the experimental nature of these projects. Directors "tried out" a wide variety of assessment procedures. There will also always be some cost differences across disciplines necessitated by the different nature of assessment processes that must occur. Some content areas may be able to conduct excellent "cheap" assessment, while other areas may only achieve moderate results despite a high price tag.

Nevertheless, there is some logic to the assumption that efficient assessment will produce more desirable results. As more data is collected, this relationship should be reassessed within content areas.

Though qualitative analysis does not enable the same level

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of precision as might be obtained from more quantitative data, the observations made in this study were systematic, relatively objective, and almost always based on multiple sources. Additional testing and replications of this study's conclusions is suggested, and could occur within the CSU's continuing program to develop and monitor programs of student outcomes assessment.

To briefly summarize, the results of this analysis suggest that future initiatives be especially sensitive to four variables: 1) faculty participation in the project, 2) adequacy of the measures developed/adopted, 3) development of administrative support, and 4) the assessment director's training/experience with student outcomes assessment procedure.

MAJOR CONCLUSIONS

The major conclusions drawn from an overview of the project's results can be organized in terms of the conceptual model: environmental variables and methodological variables as they relate to outcomes.

Environmental Variables

The environmental variables critical to project outcomes were human resources. First, recruiting and maintaining faculty support was a key variable, but one which showed high variability across projects. The factors underlying this variability are difficult to detect in the quantitative measures, but they appear in the interview data from project directors. One concern in nearly all faculty groups is "the intended primary use of the outcomes data," particularly where data suggest evidence of

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teaching/program effectiveness. Another might be described as the worry over the human capital costs of department-level assessment activities. This turned up as a particular concern for junior faculty. Many junior faculty perceive that research on teaching and learning is regarded as "second-tier" research which may not be counted in the tenure/promotion process. As several respondents indicated, assessment activities favor two faculty groups: 1) those in social/behavioral disciplines, and 2) those whose professional research activities "fit" with assessment research.

Drawing from the experiences of the project directors, there appear to be several general guidelines for establishing and maintaining faculty participation:

1) Educate participants about the value of assessing student outcomes. The motivation required to commit to outcomes assessment is dependent upon a general perception that this effort will provide payoffs. The general descriptions of outcomes attained (refer to survey results) provide more than adequate examples of the benefits achieved by effective programs. On an individual basis, participation will be enhanced if assessment activities are an integral part of the faculty performance criteria.

2) Maintain local control of the project. Support was never achieved in one project partly because the program was perceived as "someone else's grand plan that got shoved down our throats." Support for another project was in jeopardy when the local faculty senate returned the project's proposal as an external mandate.

3) Overcome the "threat" associated by many faculty with assessing outcomes. Many directors reported the suspicion expressed by their faculty concerning the intended use of the data collected. Faculty often saw the potential for information obtained to be used as a club to punish programs or individuals rather than as a constructive tool for self-development.

The importance of the development of administrative support was consistenly reported across projects. Data from the majority of respondents suggested that "in-kind" resources, publicity, campus-level coordination, and establishing a climate receptive of assessment initiatives were important positive contributions of administrative offices. Even in this positive environment however, data indicate that more concrete evidence of integration of the assessment agenda in campus-level policy and in concrete recognition of assessment activities for professional development are needed.

Two general prescriptions can be made on the basis of director responses. The first deals with the establishment of administrative support, the second partially defines the nature of the support sought:

> 1) Educate administrators about the value of assessing student outcomes. Just as executives of business organizations value economic indicators for their companies, educational administrators need to understand the potential value of performance feedback inherent in the assessment of student outcomes. They must also be sensitized to the need for discretionary, constructive use of such data. The validity of departmental reports will quickly erode if messengers delivering "bad news" are shot.
>
> 2) Administrators should recognize and reward the development of outcomes assessment in one's field as legitimate professional development. Many directors reported that contribution of time to outcomes assessment was unrealistic for all but senior, tenured faculty who could afford to "waste some time." The term "waste" was used only in reference to the potential for recognition of these efforts by chairs, deans, and department/school/university evaluation committees in control of the retention, promotion and tenure process.

Finally, project directors' training/experience in

measurement and analysis was key to project effectiveness, and here there were important differences. Some project directors reported dismay over the difficulties in learning assessment procedures as the project progressed. A number of respondents echoed the sentiments of one director who felt that the project lost momentum "just as experience and proficiency began to develop."

These observations clearly suggest the importance of training in outcomes assessment for those administrating assessment development. Two general prescriptions flow from the comments made by project leaders:

> 1) Assess the training/experience of project directors specific to assessing student outcomes. General knowledge and experience as an educator is not enough. This report's "assessment" of relevant knowledge was dependent upon self-report. This approach appeared satisfactory, producing large variance in the levels of described outcomes assessment expertise.
>
> 2) Provide continued opportunities for training in and exposure to outcomes assessment. Many of the directors reported that the system-wide conferences and reports on outcomes assessment had been responsible for kindling their interest in the process. If faculty-based outcomes assessment is to be "institutionalized" within the CSU, we must continue to share knowledge.

Methodological Variables

The key methodological variable was the development or adoption of adequate measures of student outcomes. Adequacy of measurement implied several aspects. The first is the simple psychometric properties of the assessment. This involves the reliability and validity of the assessment procedures. As an example of awareness of measurement adequacy, several directors

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did an excellent job of assessing the inter-rater reliability of judges producing qualitative assessments of student projects or papers. Others spent considerable time and consulted widely with their peers to evaluate the content validity of their assessments. This process often had positive, retroactive impact on curriculum and teaching strategies.

Multicultural sensitivity also contributed to the adequacy of measurement, especially in reference to the inferences drawn from assessment scores. A critical question for directors to ask was, "what assessment procedures will provide all students with an equitable opportunity to demonstrate their competence?" This consideration should result in the production of multiple, more creative indices that would provide a more comprehensive picture of student achievement.

Multiple types of assessment also enabled directors to obtain feedback on more than one type of outcome. Rather than focusing solely on content or cognitively-based outcomes, additional measures of affective and attitudinal variables resulted in a much richer, more complex basis for judgements of program adequacy.

The bottom line is that measures cannot be haphazardly developed or selected. Future faculty initiators of student outcomes assessment should not be told if, when, and what to assess, but most may benefit from technical support in reference to how to assess.

The following summary prescriptions are derived from

observations related to procedural and measurement adequacy:

1) Clearly define educational objectives. The nature of the assessment tools cannot be determined until the desired outcomes are described. Several directors reported that healthy re-evaluations of their curriculum and program goals were a necessary precursor to the development of the actual assessment instruments.

2) Assess multiple outcomes. Directors indicated that since educational objectives were seldom unidimensional, it made little sense to attempt to assess educational criteria with a single measure. The richest data sources enabling the clearest assessment of program outcomes involved combinations of content tests, performance-based demonstrations, attitude assessments, affective measures, etc.

3) Sensitivity to test fairness across constituent groups. Not all directors dealt with this issue, but those who did provided ample evidence of differential performance across groups. Though some differences may validly reflect the results of disadvantaged preparation for higher education, assessment procedures must minimize performance deficits related to native language differences and/or content that contains cultural/socioeconomic bias.

4) Assessment of measurement reliability/validity. The importance of this recommendation cannot be over-emphasized. If an assessment instrument does not possess adequate psychometric properties, it provides no basis for meaningful inference concerning the relative performance of the student or the success of the academic program. No amount of faculty and administrative support will not save a project based on faulty measurement.

Outcomes

The adequacy of project outcomes to provide direction for future assessment initiatives is a critical dimension of project effectiveness. Evidence for many of the direct and indirect outcomes anticipated in the model for the study proved difficult to evaluate, in part because some of the target outcomes are long-term effects which would require longitudinal measurement. In

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addition, some data on outcome variables were still being collected as project final reports fell due, so did not get included as outcomes.

The outcome which may be the best index of project effectiveness appeared to be dissemination of results. Project directors' verbal reports consistently underscored the importance of information sharing as an outcome of project involvement. Moreover, the projects with explicit descriptions of plans for dissemination to an identified audience in their early goal definition continue to be active in publishing results. Further study of these projects and their results should provide additional direction for future strategies in faculty-initiated assessment programs.

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California State University
Institute for Teaching and Learning

1991 CSU Systemwide Seminar on
Student Outcomes Assessment

"TOWARD A NEW PARADIGM: ASSESSMENT IN MULTICULTURAL CALIFORNIA"

June 8, 1991
San Francisco Hilton Hotel

Seminar Agenda

10:00 - 10:30	Opening & Remarks
	Olita D. Harris, Seminar Chair and Coordinator San Diego State University
	Sherrin Marshall, Program Officer Fund for the Improvement of Postsecondary Education
10:30 - 12:00	Results of the Evaluation Study
	Matt Riggs, Assistant Professor California State University, San Bernardino
	Joanna Worthley, Assistant Professor California State University, San Bernardino
12:00 - 1:30	Lunch (on your own)
1:30 - 2:15	Assessment & the Public Policy Agenda: Shifting Sands
	Peter Ewell, Senior Associate National Center for Higher Education Management Systems
2:15 - 3:00	Whither WASC Goeth
	Ralph Wolff, Associate Executive & Director Western Association of Schools and Colleges
3:00 - 3:15	Break

3:15 - 4:25 Promising Practices - Small Group Discussions

Subject Matter Assessment in Teacher Education
Convener: **Bernice Bass de Martinez**
Chair, School of Education & Human Development
CSU, Fresno

Multicultural Issues in General Education/Transfer
Convener: **Cynthia Flores**
Assistant Dean for Student Affairs
San Diego State University, Imperial Valley Campus

ESL Assessment
Convener: **Roberta Ching**
Assistant Professor of Learning Skills
CSU, Sacramento

Assessing Discrimination & Reverse Discrimination
Convener: **Kenneth Nyberg**
Professor of Anthropology and Sociology
CSU, Bakersfield

Critical Thinking Assessment
Convener: **Susan Nummedal**
Professor of Psychology and Chair of
CSU Critical Thinking Council Assessment Group
CSU, Long Beach

Reading and Writing Competence: Implications for Multicultural General Education
Convener: **Priscilla Chaffe-Stengel**
Professor of Information Systems and Decision Science
CSU, Fresno

4:30 - 5:40 Repeat Promising Practices - Small Group Discussions

5:45 - 6:00 Wrap-Up

Frank Young
Statewide Director
California Academic Partnership Program

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